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ABSTRACT

This collection of essays offers ideas, observations, maps, photographs, and descriptions of Boston (Massachusetts) and New England. The 13 essays in the collection include: (1) "An Introduction to New England and Boston: Advancing the Revolution in Geographic Education in a Region of Change" (Theodore S. Pikora; Stephen S. Young); (2) "An Overview of Greater Boston from Space" (Stephen S. Young; Theodore S. Pikora); (3) "Nature and Society in New England: The Other Dimension" (William B. Meyer); (4) "The Place-Name Cover of New England" (John E. Harmon); (5) "Neighborhoods in the Walking City of Boston" (Janet Duncan); (6) "Salem, Massachusetts: The Changing Geography of a Coastal Community in New England" (Theodore S. Pikora); (7) "The Heritage of the Textile Industry in the Social Fabric of Lowell, Massachusetts" (Stephen Matchak); (8) "Cape Cod: The Ephemeral Landscape" (Reed F. Stewart); (9) "Pack Your Bag: Applying Local Experiences to a Global Perspective" (Louise B. Swiniarski); (10) "Make Way for Ducklings: A Bird's Eye View of Downtown Boston" (Stephen S. Young; Katie Quinlan); (11) "Locating, Mapping, and Explaining Vernacular Region Names" (John E. Harmon); (12) "Neighborhoods and Landfill in Boston" (Theodore S. Pikora); and (13) "Geography and the Past in the Neighborhoods of Salem, Massachusetts" (Theodore S. Pikora). (Contains 28 figures. Each chapter contains references.) (LB)

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A PATHWAYS IN GEOGRAPHY
Resource Publication

National Council for
Geographic Education

BOSTON AND NEW ENGLAND:

ADVANCING THE REVOLUTION IN GEOGRAPHIC EDUCATION IN A REGION OF CHANGE

**Theodore S. Pikora and
Stephen S. Young, Editors**

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BOSTON AND NEW ENGLAND:

ADVANCING THE REVOLUTION IN GEOGRAPHIC EDUCATION IN A REGION OF CHANGE

**Theodore S. Pikora and
Stephen S. Young, Editors**

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PATHWAYS

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Boston and New England: Advancing the Revolution in Geographic Education in a Region of Change
Pikora, Theodore S. and Stephen S. Young, editors

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1

AN INTRODUCTION TO BOSTON AND NEW ENGLAND: IMAGES AND ENCOUNTERS

Theodore S. Pikora and Stephen S. Young

Most popular images of New England are built with the mortar of tradition, and they include the building blocks of early history, adaptability, timeless landscapes, and even proper manners. Fishermen wresting an existence from an unfriendly sea and farmers cultivating worthless soils spawn the work ethic and the Yankee ingenuity that characterize the people of the region. Lighthouses, the beaches of Cape Cod, resplendent fall foliage, and a rolling countryside of villages dotted by white steeples symbolize the tranquillity and aesthetic beauty of its natural setting. At least one New England state uses a variety of such scenes along with the slogan, "The Spirit of Massachusetts is the Spirit of America," in its tourism promotional media, suggesting that they are inherent to the very foundations of the nation.

New England is also a place of change and diversity. Although *lobsta, the cod,* clam *chowdah,* and baked beans are still common to the diet, the passage of nearly four centuries of development since the Mayflower landed has left the region marked by a succession of cultures. Where once the confining Puritan village stood, an important node in the boundless galaxy of the information age has developed. A succession of invented economic structures continues to evolve from harvesting fish to high technology. The years have witnessed a maturation in the perception of an environment once thought to be an endless resource base for private profit to one that needs management and protection for the public good.

This site guide for the 1999 Annual Meeting of the NCGE attempts to portray Boston and New England in the context of both tradition and change. Steve Young and Ted Pikora set the stage for current patterns in the greater Boston region with their notes and analysis of a swath of satellite imagery (Chapter 2). William Meyer's thought provoking-essay (Chapter 3) on the *other* environmental history of the region suggests that inasmuch as natural systems have been altered through time, so have transformations in the human interpretations of them. An environmental advantage or value of one era may be viewed in an opposite context by the culture of another. In Chapter 4, John Harmon portrays the place names of New England as a link with tradition. The patterns of toponyms also reflect the variety in cultural overlays that have visited the region.

Boston, Salem, and Lowell, Massachusetts are three settlements in transition selected for discussion. Janet Duncan in Chapter 5 describes Boston (pop. 558,394 est. 1996 and its Consolidated Metropolitan Area's population-5,563,475), a city that has grown commensurate with the need to accommodate new types of people. The North End with its early colonists and later nineteenth century immigrants, the aristocratic wealth of Beacon Hill and Back Bay, and the new age urbanites of the South End all contributed to a vibrant and complex inner city fabric. To satisfy the demands of population expansion, Boston has had to effect dramatic modifications in its physical boundaries by filling in its shoreline. Salem (pop. 38,008 est. 1996) is a smaller coastal settlement to the north that has not undergone the degree of modern development as is found in Boston. Ted Pikora traces the remarkable array of preserved architectural artifacts and land use patterns in Salem's cityscape that depict at least five historical geographies (Chapter 6). It is a testament to a city that has re-invented itself as one economic base and culture replaced another. Lowell is less than half the age of Boston and Salem and traces its beginnings to the era of textile manufacturing. Steve Matchak connects the traditional economy of Lowell to the infusion of a variety of immigrant groups and their subsequent geographical organization (Chapter 7). The arrival of new waves of immigrants is a process still occurring today long after textiles have left the city.

In Chapter 8, Reed Stewart surveys the dramatic processes of transformation in the topography and seascapes of Cape Cod. Known as an area for family vacations and retirement communities, an issue of great concern on the Cape today is the delicate and unstable environments of its beaches, water tables and coastlines. It suggests that the recent recreational, retirement and suburban land uses of the twentieth century may not be easily adaptable to the rapid and continuing evolution in geomorphology that has taken place since the last glacial age.

Classroom teachers both within and outside of the region will find guides for five learning activities (Chapters 9-13). The first (Chapter 9) is an elementary school activity based upon children learning about their city, Salem, Massachusetts. By applying fundamental themes in geography and geographic concepts to data they gathered and analyzed, they were able to use their personal experiences and broaden them to develop a global perspective. The second (Chapter 10) is based on the classic children's book by Robert McCloskey, *Make Way for Ducklings*. Set in the Boston Public Garden, it offers younger students an opportunity to develop imagery interpretation and mapping skills, and to understand the relationships between wildlife and urban environments. Toponyms and regions are the major themes of the third activity (Chapter 11). Here, teachers ask students to analyze patterns of place names, and to develop their understanding of regional organization. In the fourth learning experience (Chapter 12), students can analyze landfill projects in downtown Boston using a series of historic maps to understand the changing effects of human activities. A fifth learning guide (Chapter 13) traces the evolution of two neighborhoods in Salem. Students can examine them by using data related to architecture, construction dates, and occupants. Students map the information and attempt to explain neighborhood characteristics based on geographical relationships. Each of the learning experiences offers a number of opportunities for expansion and enrichment.

The long history of New England has contributed to an image of tradition, while it has allowed the time for change. Both tradition and change have distinctly marked the region. A case in point is the Route 128 corridor around Boston, a significant player in the American high tech revolution. Within only a few miles of its heavy rush hour traffic, lie the quiet historic town commons of another American Revolution, Lexington and Concord. The spatial and temporal contrast between 1775 and 1999 typify the diversity that constitutes the real *sense of place* for New England, and the remarkable quality to which the evidence of the past has been preserved in an environment of futures. It effectively teaches that as surely as the leaves change from the lush greens of summer to the fiery brilliance of fall, only to be reborn again in the spring, New England also has continued to renew itself, accommodating the challenges in reinterpreting its culture and reusing its environment.

We welcome you to Boston and New England, an apt setting for advancing the revolution in geographic education.

Ted Pikora and Steve Young, Salem, Massachusetts

Boston and New England

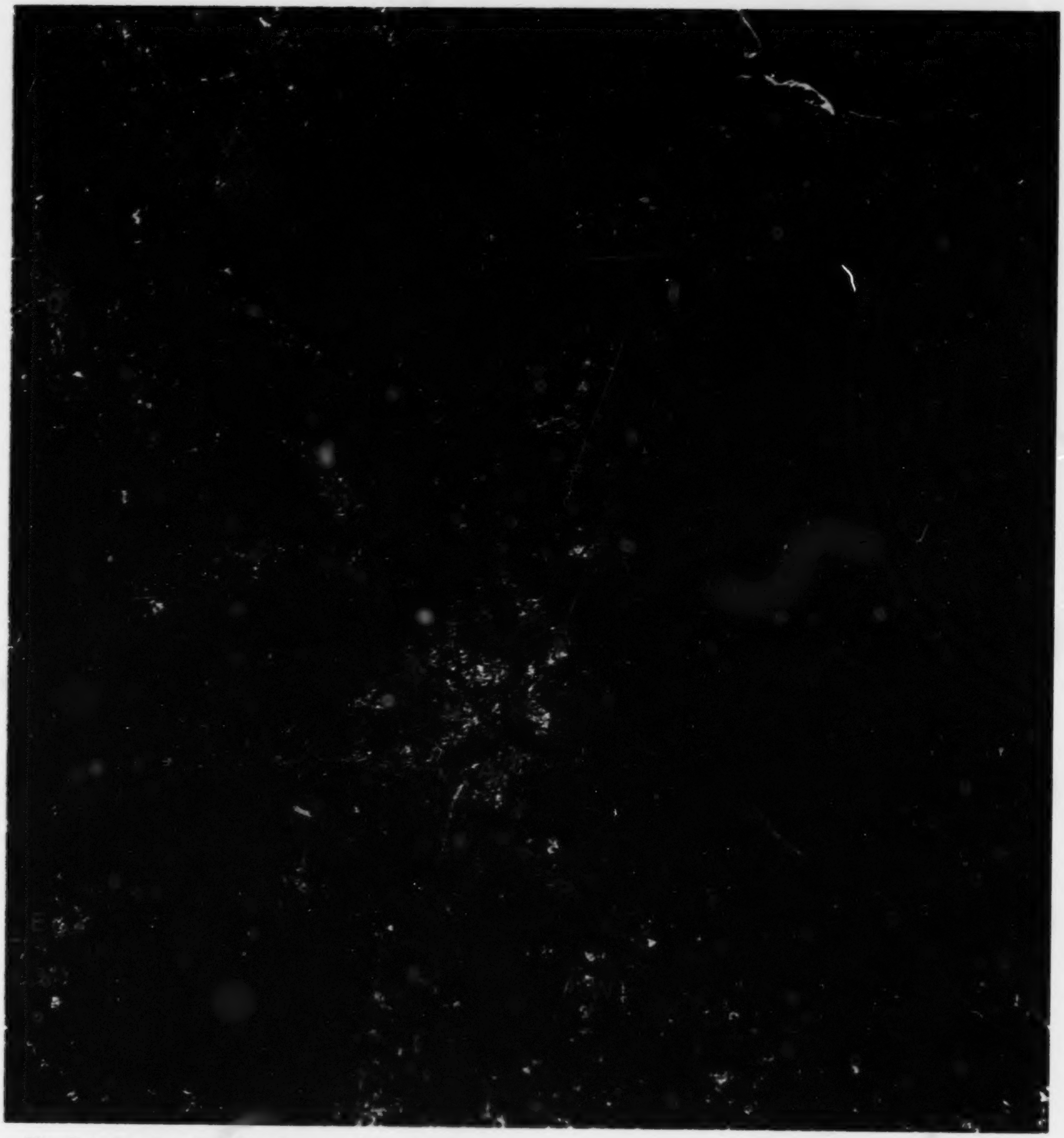
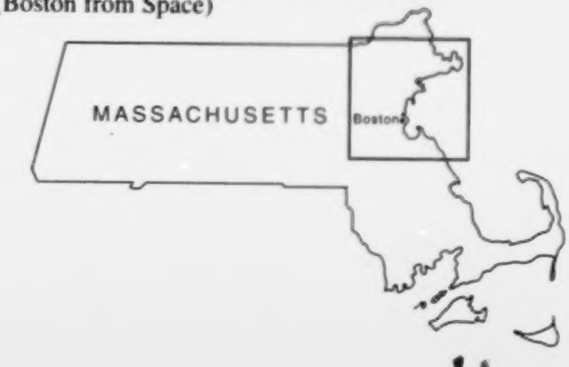


Fig. 2.1: Landsat Satellite Image of Greater Boston
(Boston from Space)


MASSACHUSETTS
Boston

BOSTON
FROM SPACE

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2

AN OVERVIEW OF GREATER BOSTON FROM SPACE

Stephen Young and Theodore Pikora

At 700 kilometers (428 mi.) above the earth, the Landsat satellite captures a glimpse of Boston and its setting, and the resulting image is a useful tool for generalizing about selected geographical patterns and gaining an introduction to the area (Fig. 2.1). Boston (A) is located on the coast near the center of urban development; and the overall breadth of the image stretches from just north of Gloucester (B) on Cape Ann in the upper right corner to the southeast where Route 3 (3) leads off toward Plymouth and Cape Cod. In the northwest, the cities of Lawrence (C) and Lowell (D) straddle the Merrimack River, and farther south lies Framingham (E), a western suburb of Boston.

Beginning in the east at Massachusetts Bay, the most impressive feature is the irregular coastline. Overall, it is one of submergence, resulting in a myriad of harbors, islands, estuarine areas, and beaches. Starting at the top on the north side of Cape Ann, the white strips of beaches in Essex and Ipswich are highly visible. Sand dunes dominate the seascape there, and the adjacent areas of stippled orange tones reflect the most extensive undeveloped and unforested land in the region. They are mostly salt marshes that are home to a variety of wildlife with a large audience of naturalists, particularly bird watchers. On the northeastern part of the Cape is Rockport's (F) small harbor, once famous for its granite quarries that are still visible on the image as small white dots. Today, Rockport features its art colony and functions as a tourist destination. The larger port of Gloucester is on the south side of the Cape. At one time, it was home of one of the largest fishing fleets on the east coast, but the industry is now in a state of rapid decline because of smaller catches and increased restrictions on catches, seasons, methods, and fishing grounds.

A series of rocky islands are visible moving southward along the coast toward the three harbors of Beverly (G), Salem (H), and Marblehead (I). Fishing was an early part of the economic base in these communities, and Salem became a significant seaport around the turn of the nineteenth century through its worldwide trade focusing on China and the East Indies. Today, all three ports are home mostly to lobster boats and pleasure craft.

Farther south along the coast, a classic *tombolo* (a sand or gravel bar connecting the mainland with an island or another island) created by the natural physics of sand and waves connects Nahant (J) to the mainland at Lynn (K). The outcrop of Nahant acts as the southernmost extremity of the hard rock character of Cape Ann on the coast. From here southward, glacial deposits dominate the shoreline to Cape Cod and beyond. The seaside cliffs and long sweeping beaches on this part of the Massachusetts coast are much more subject to storm erosion than is the North Shore of Boston along Cape Ann.

Boston Harbor is defined by the protecting arms of Winthrop and Deer Island (L) to the east, along with Hull and Nantasket Beach (M) on the southeast side. The harbor islands are largely made up of glacial deposits that historically served to guard the shipping channels into the inner harbor by offering protection from storms and potential military threats. After a long period of neglect, they are now being developed and preserved for their recreational, educational, and historic resources. Several rivers frame the city of Boston, itself. The Mystic to the north functions as a base for a variety of industries and port activities. The Charles, with its recreational boating and park space, creates a scenic border with Somerville and Cambridge (N) to the north and west. Along the southern border of Boston next to Milton (O) and Quincy (P), the Neponset River has been the focus of extensive efforts to conserve valuable natural habitats.

In addition to the rivers and the sea, the black imprints of water are also seen in a number of ponds and lakes scattered across the landscape. They are largely the handiwork of the last glacial ice sheet; and many, such as Lake Cochichewick (Q) just east of Lawrence, are reservoirs for local municipalities. Indeed, most of the lakes in a sector from Jamaica Pond (R) in Boston toward and around Framingham were developed as reservoirs during the early years of metropolitan growth.

After the turn of the twentieth century, this string of water supplies culminated in the construction of the Wachusetts and Quabbin Reservoirs in the central part of the state (to the west of the image).

A continuous *conurbation* (general term geographers use to describe vast metropolitan complexes formed from the coalescence of two or more major urban areas) of development, marked by shades of gray, covers Boston and the municipalities immediately to the west and north. It is bounded on the satellite image by a sharp contrast from grays to green in a ring around the city extending from Lynn in the north to Quincy in the south. This is the edge of the Boston Basin with its raised rim of hard rock. Historically, it has acted as a control over other urban expansion, and it has resulted in an unusually compact space for Boston when compared to metropolises with populations of comparable size. A hundred years ago when other cities were busily connecting with their satellite communities by streetcars, the basin rim was a barrier difficult to traverse. Yet, the problem became a benefit as Boston's metropolitan government and several surrounding cities purchased large pieces of the undeveloped green space such as the Middlesex Fells (S) and Lynn Woods (T) reservations beyond the rim for recreational uses for future generations. It became Boston's "Emerald Necklace." The most extensive of these spaces is the Blue Hills Reservation (U), south of Milton.

In the heart of the city adjacent to its central business district, lies Boston Common (at the top of the "A"). Although its origins go back to the land-use needs of the early English settlement, today it forms, together with the Public Garden across Charles Street, a foundation for a planned system of parks. In the middle of nineteenth century, civic leaders and professional landscape architects such as Frederick Law Olmsted were responsible for the development of a green space system that stretches from the Common westward to the Fenway, only faintly visible on the image. It is seen more clearly on images included in the *Make Way for Ducklings* learning guide (Chapter 10).

The string of parklands then turns south winding its way toward Jamaica Pond, forming a circuitous series of strips and chunks all the way to the Blue Hills Reservation. This pattern, along with other green spaces along the Charles River and the eastern shoreline, is a valuable resource in the urban area. It contributes to a highly livable urban setting with variations in land use intensity and a strong dose of natural environments.

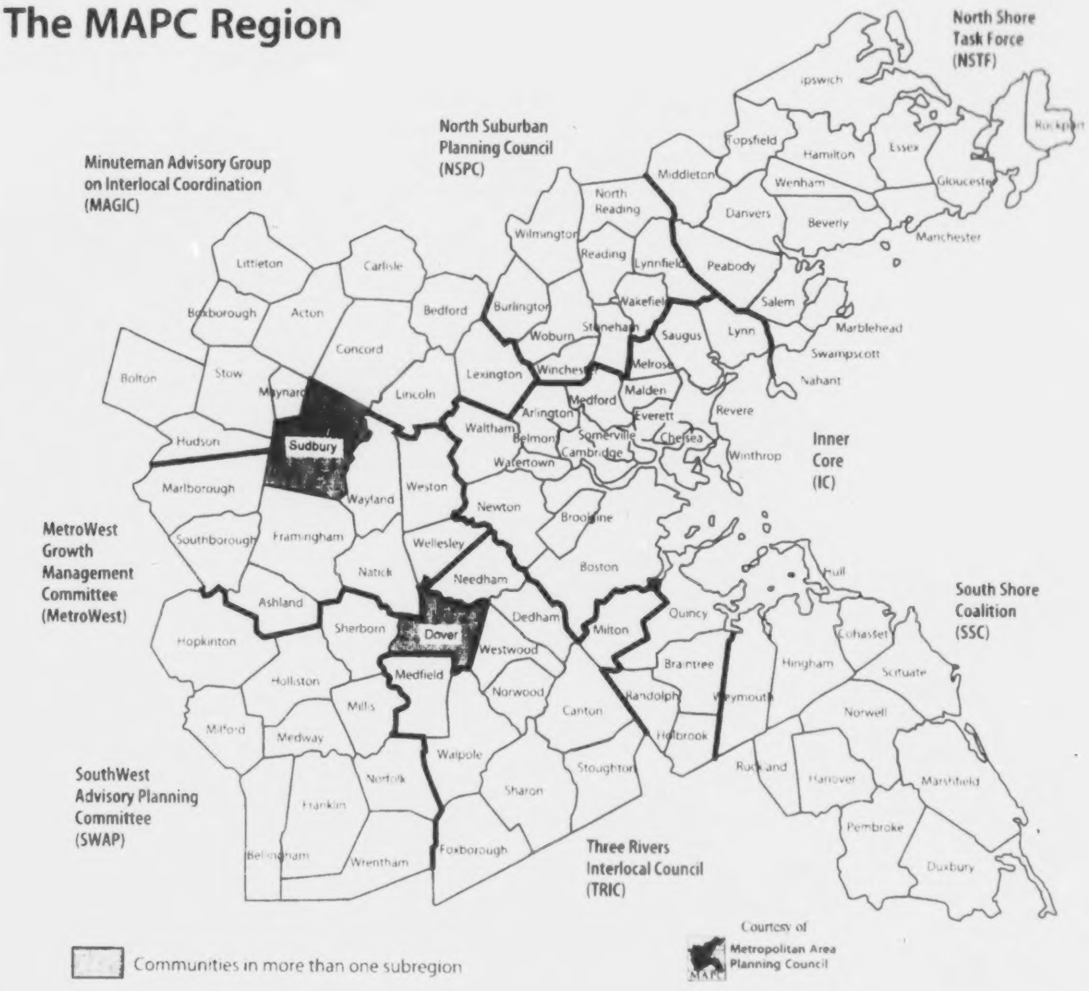
In the early part of the twentieth century, Boston was known as the Hub. This nickname reflected the major automobile arteries seen on the satellite image as a series of spokes reaching from the heart of the city outward to the north, west, and south. These routes provided the only access in and out of the city. Indeed, many of the trips between towns around the city were made via downtown Boston! To alleviate the congestion, the Commonwealth constructed Route 128 (128) in the 1950s, approximately 20 miles (32 km) from the city center. It was one of the first circumferential highways in the nation, and it sparked an immediate explosion of jobs and services in the suburbs that already had substantial population numbers.

The intersections of the artery spokes with 128 created instant places of centrality. These nodes, in turn, became the foci for new shopping malls, and industrial and office parks; and they can be seen all along 128 from the Northshore Mall in Peabody (V) to the South Shore Plaza in Braintree (W). Route 128 was a preferred location for many of the region's new industries from high-tech, to bio-tech, to communication technology. In recent years, the number of medical and educational institutions has increased significantly, functions almost entirely located near the urban center of the downtown in the past. Although Boston is a vibrant city that maintains its economic and social dominance in the region, the 128 belt has its own role to play and contributions to make.

The balance of human activity between the suburbs of 128 and the inner city zone suggests that a high degree of economic viability and even complementarity exists for these two pieces that make up the area of greater Boston. A review of selected patterns in the region of the Metropolitan Area Planning Council supports this notion (Fig. 2.2). Biotechnology is an emerging segment of the high tech industry. Although many firms are found in the suburban belt, they also concentrate in Boston and its adjacent communities like Cambridge where they are obviously associated with educational institutions such as the Massachusetts Institute of Technology (MIT) (Fig. 2.3). Median home sale prices, one indicator of community desirability, indicate that both suburban and downtown locations enjoy high value (Fig. 2.4).

Prices have lagged behind in older cities such as Lynn and Gloucester where central retail functions and other economic bases have eroded in the last half of this century. A scattering of suburban towns also have lower home values, so the pattern of variation, therefore, does not exhibit a distinct contrast between inner city and suburb.

The daily movement of commuters in the metro area emphasizes the heavy use of automobiles in the 128 belt, especially in the North Suburban Planning Council (NSPC) sub-region. A decided decrease in the number of vehicles has occurred in the Inner Core (IC) (Fig. 2.5). Despite the efforts


The MAPC Region
North Shore Task Force (NSTF)
North Suburban Planning Council (NSPC)
Minuteman Advisory Group on Interlocal Coordination (MAGIC)
MetroWest Growth Management Committee (MetroWest)
Inner Core (IC)
South Shore Coalition (SSC)
SouthWest Advisory Planning Committee (SWAP)
Three Rivers Interlocal Council (TRIC)
Ipswich
Rockport
Topsfield
Hamilton
Essex
Gloucester
Middleton
Wenham
North Reading
Danvers
Beverly
Manchester
Wilmington
Reading
Lynnfield
Peabody
Littleton
Carlisle
Salem
Boxborough
Acton
Bedford
Burlington
Wakefield
Stoneham
Saugus
Lynn
Marblehead
Concord
Woburn
Swampscott
Bolton
Stow
Lexington
Winchester
Melrose
Nahant
Maynard
Lincoln
Medford
Malden
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Revere
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Holliston
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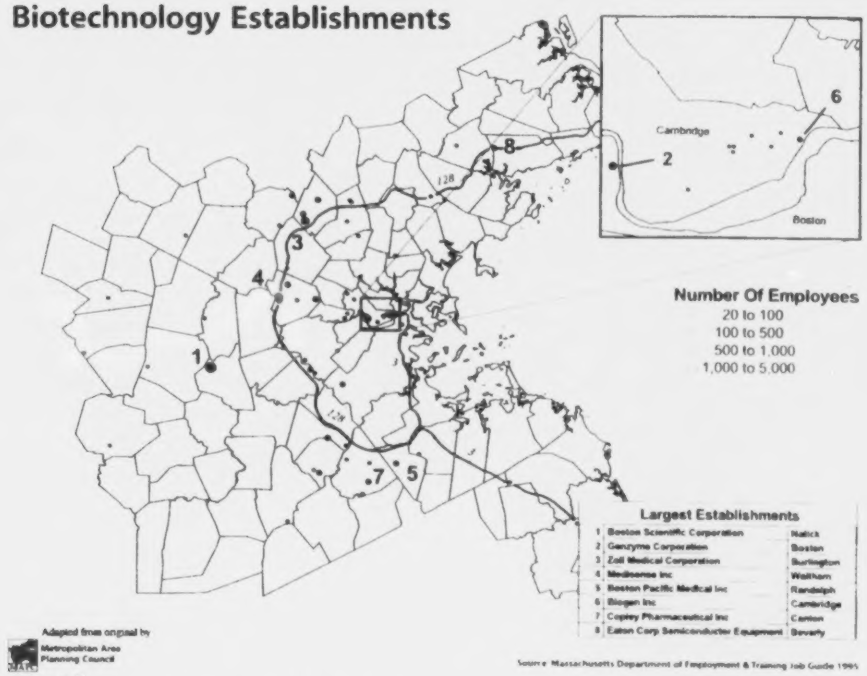
Weymouth
Millis
Canton
Milford
Medway
Holbrook
Norwell
Walpole
Rockland
Norfolk
Stoughton
Hanover
Marshfield
Sharon
Franklin
Pembroke
Bellingham
Wrentham
Foxborough
Duxbury
Communities in more than one subregion
Metropolitan Area Planning Council
MAPC

Courtesy of Metropolitan Area Planning Council

Fig. 2.2: The Metropolitan Area Planning Council (MAPC) Region.

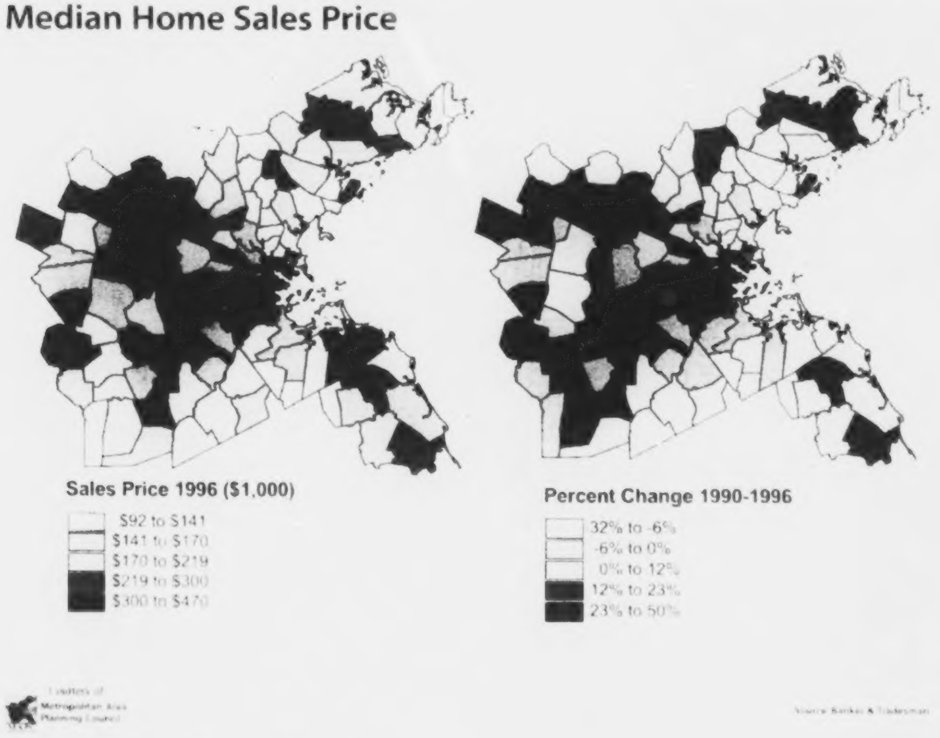

Biotechnology Establishments
Cambridge
Boston
1
2
3
4
5
6
7
8
128
Number Of Employees
20 to 100
100 to 500
500 to 1,000
1,000 to 5,000
Adapted from original by
Metropolitan Area Planning Council

Largest Establishments

1	Boston Scientific Corporation	Natick
2	Genzyme Corporation	Boston
3	Zoll Medical Corporation	Burlington
4	Medisense Inc	Waltham
5	Boston Pacific Medical Inc	Randolph
6	Biogen Inc	Cambridge
7	Copley Pharmaceutical Inc	Canton
8	Eaton Corp Semiconductor Equipment	Beverly

Source Massachusetts Department of Employment & Training Job Guide 1995

Fig. 2.3: Biotechnology Establishments


Median Home Sales Price
Sales Price 1996 ($1,000)
$92 to $141
$141 to $170
$170 to $219
$219 to $300
$300 to $470
Percent Change 1990-1996
32% to -6%
-6% to 0%
0% to 12%
12% to 23%
23% to 50%
Courtesy of
Metropolitan Area Planning Council

Source Banker & Tradesman

Fig. 2.4: Median Home Sales Price

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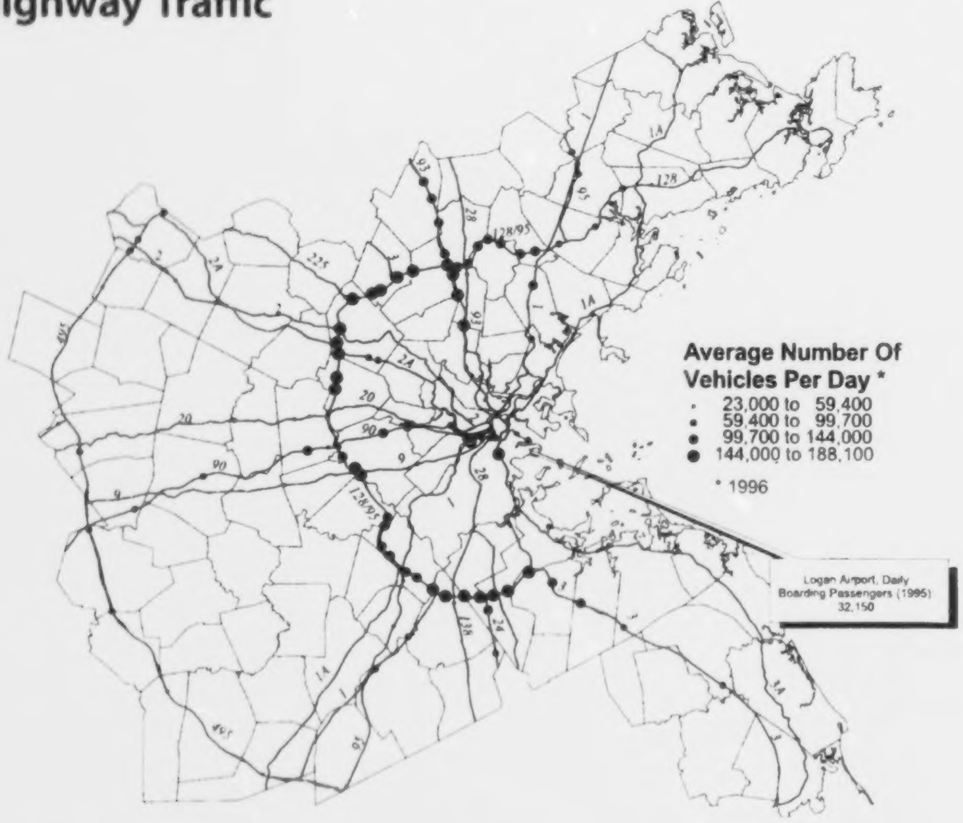
on the "Big Dig," the largest transportation project in the country that will eventually improve the flow of automobiles through Boston; the downtown, instead, is the focus of public rail-line travel that has been expanding at double-digit rates in recent years. In response to federal mandates to reduce air pollution, the region is actively pursuing additional increases in public transportation. Along with rapid transit and trains, an extensive network of bus services and ferries are now operating to connect locations on the both the North and South Shore to Boston.

Highway Traffic


Average Number Of Vehicles Per Day *
• 23,000 to 59,400
• 59,400 to 99,700
● 99,700 to 144,000
● 144,000 to 188,100
* 1996
Logan Airport, Daily Boarding Passengers (1995) 32,150
1A
128
95
93
28
128/95
225
2A
495
20
90
9
1
3
24
3A

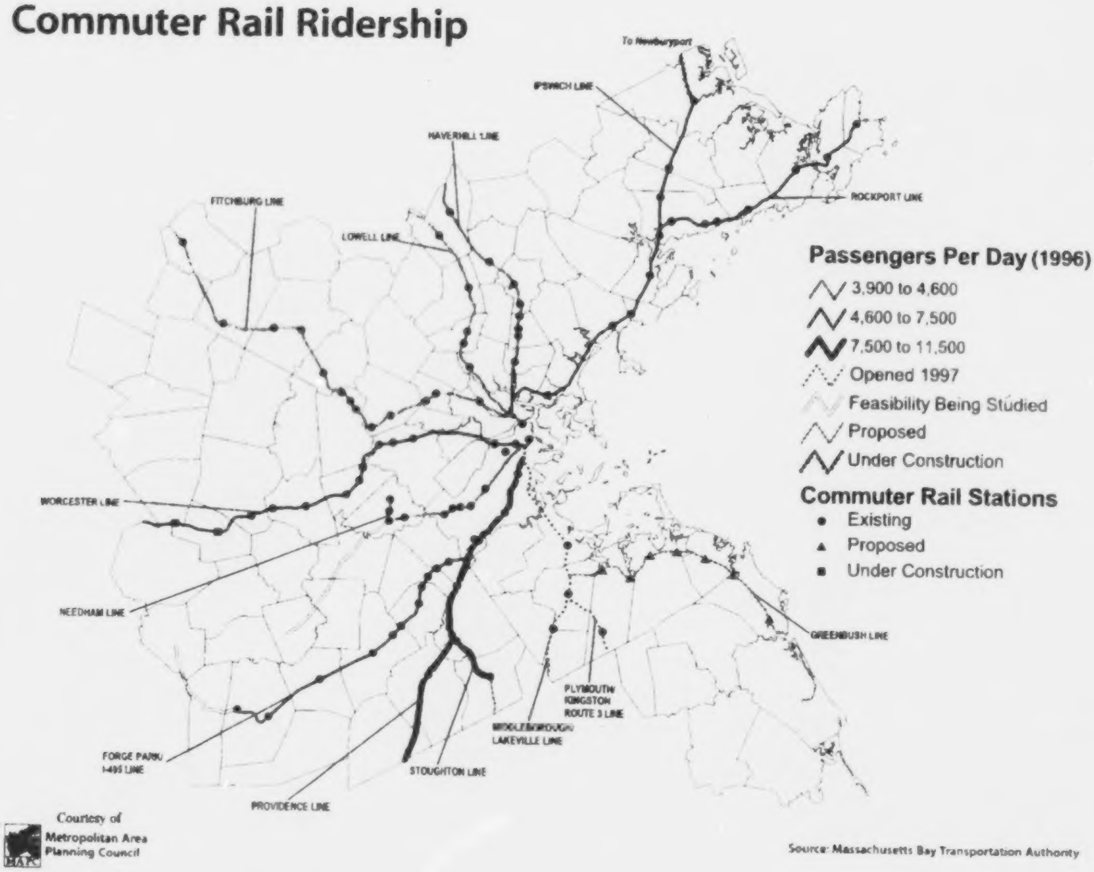
Courtesy of Metropolitan Area Planning Council

Source: Massachusetts Highway Department

Fig. 2.5: Highway Traffic

Although variation is apparent among the communities in the greater Boston area, it does not suggest that growth in the suburbs has been at the expense of the central city, a theme that has plagued many other metropolises in the country. Rather, evidence indicates that a relatively healthy relationship exists between Boston and its hinterland (Fig. 2.6).

A different pattern on the satellite image characterizes the zone beyond Route 128 toward the outer belt of I-495 (495). It is decidedly less intense in its development, and one can still see traces of former mill towns and cities as individual entities on the landscape. Much of the suburban development here occurred during the 1970s after the inner zone from 128 toward Boston had peaked; and they reflect land use patterns of a period when communities were more aware of growth


Commuter Rail Ridership
To Newburyport
IPSWICH LINE
HAVERHILL LINE
FITCHBURG LINE
LOWELL LINE
ROCKPORT LINE
Passengers Per Day (1996)
3,900 to 4,600
4,600 to 7,500
7,500 to 11,500
Opened 1997
Feasibility Being Studied
Proposed
Under Construction
Commuter Rail Stations
Existing
Proposed
Under Construction
WORCESTER LINE
NEEDHAM LINE
GREENBUSH LINE
PLYMOUTH KINGSTON ROUTE 3 LINE
MIDDLEBOROUGH/ LAKEVILLE LINE
FORGE PARK/ I-495 LINE
STOUGHTON LINE
PROVIDENCE LINE
MAPC

Courtesy of Metropolitan Area Planning Council

Source: Massachusetts Bay Transportation Authority

Fig. 2.6: Commuter Rail Ridership

strategies and controls. In several cases, the commercial and industrial activities of Route 128 have moved outward along radials such as Route 3 (3) and I-93 (93) that offer room for growth and access to the labor sheds of Lowell, Lawrence, and southern New Hampshire.

The dominant color between Route 128 and I-495 is green, with lighter shades in open fields and middle to dark tones in forest cover. It suggests that the forests, which were removed by earlier settlers, have now returned. Much of the darker green acreage represents state and locally managed park and conservation lands that have attained increased importance during the past few decades. They have contributed to maintaining the rural character of nearby communities and they also have been responsible for increases in the likes of deer, fox, and even the occasional coyote. In addition to wildlife, many of the forest canopies also cover backyard swing sets, three car garages, and bicycle paths; a result of deliberate zoning and development measures. The town of Boxford (X), between Lawrence and Salem for example, has more than 6000 people and three village centers. Yet, it is difficult to see anything but the richness of the dark green forest cover.

Each of the colors on the Landsat image points out patterns of differences, and together they constitute the unique character of the Boston region. This collage, however, literally reveals only the surface of a highly complex geographical region with a relatively long history of human occupance. It hints of a variety of interesting landscapes and intricate processes, and it provides clues about places that beckon the geographer to visit more closely.

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3

NATURE AND SOCIETY IN NEW ENGLAND: THE OTHER DIMENSION

William B. Meyer

American geographers interested in how environment and society interact have focused now on one, now on another aspect of their relationship. Early in this century, we had environmental determinism, which asked how physical geography controlled human aptitudes and activities. Two of its leading lights spent many of their active years in New England: Ellen Churchill Semple at Clark University and Ellsworth Huntington at Yale. The environmental geography of New England as they saw it was largely a great success story, as human activities had gradually conformed to the dictates of the land and a seemingly poor and barren land had proved to be a great asset for the energy and resourcefulness that it fostered.

The determinism that they practiced, though influential, was overly simplified and ill-founded. Little of it has survived the test of critical examination. The recognition of its deficiencies led to a geographic retreat from the topic of society and environment altogether. The retreat has only been reversed in relatively recent times with the emergence of a new set of concerns. Nature-society relations are now defined chiefly as those of human influences on the biophysical environment: something largely ignored by the determinists and, unlike the supposed laws that Semple and Huntington proposed, something of genuinely great significance.

For during what will soon be four centuries of European settlement, the natural environment of New England has indeed undergone many profound changes. They have ranged from the obvious to the subtle, from the transient to the irreversible. Some have been of great importance to human life and livelihood or to the ecology of the region: fish stock declines, natural or the result of overharvesting; forest change; the loss of some plant and animal species from the region, the introduction of many more, and changes in the number and distribution of still others; lasting influences on air and water quality and water flows. Many excellent studies of this side of the New England environment have been written: William Cronon's *Changes in the Land*... (1983) for example, with its focus on the seventeenth and eighteenth centuries; Betty Flanders Thomson's *The Changing Face of New England* (1958), with its focus on land cover and natural history; and others.

It is too easy, though, to mistake this part of the subject for the whole of it. The new focus also leaves something out. One too easily tends to take society-nature geography to be simply the history of the former's influence on the latter, just as the determinists took it to be the other way around. The character, causes, and consequences of environmental change are part of the story but not all of it. If many of the natural features of New England have been changed, even transformed, others are much the same as they were four centuries ago, yet the latter too have a historical geography, and a rich and eventful one. Of interest to geographers are not only the aspects of the environment that have been altered by human action but also the ones that change in their relation to human activities as those activities change, becoming more or less useful as resources and more or less harmful as hazards or obstructions without themselves being affected. Shifts in population, society, economy, and technology have altered in many ways the roles that the unchanging faces of nature have played for human activities. Such is the other, the neglected side of nature-society studies, the other dimension of the New England environment.

Climate

That climate can change, on its own or with human help, nobody today is in any danger of forgetting. The danger lies elsewhere: in supposing too easily that climatic change has been or will be the most important source of change in weather-society relations. The climate of New England, as of every other region of the world, has never been stable. Yet most of its features have not shifted drastically in the past few centuries, and most weather events, even violent ones, are recurrences of ones that have come before and will come again. Without revolutionary changes in the New England climate, nonetheless, many revolutionary changes in its significance have stemmed chiefly from shifts in human society.

They can easily be misperceived as shifts in the weather, just as we are apt to suppose that the room we are in has become hotter when we ourselves have merely become upset or excited. It was common knowledge in early and mid-nineteenth century New England that the climate was changing, for the better in some ways and for the worse in others. Winter cold and snowstorms had grown less severe, summer droughts more so; such, wrote John Chipman Gray in the 1850s, had lately been "a prevailing impression among the inhabitants of New-England ...(1856)." Gray was its most effective critic, for he could explain why so many people believed something that reliable records showed not to be the case.

For on one point, he granted, they were correct. Certainly the weather's effects were not what they had been. No evidence that a change in the weather was responsible, however, and it was not necessary to suppose that one had occurred. The same recurring conditions and events had new consequences because the society exposed to them had changed.

Though the cold and snowfall had not diminished, it might well seem that they had, Gray wrote, for winters in colonial times "were more severely felt than any winter of the same severity would now be. Our people are better clothed, our dwellings better fortified against cold," he pointed out, and the greatest snowfalls interfered less with travel than they once had. Thanks to a denser population than in the past, "our roads are far more quickly rendered passable after heavy storms. A mass of snow which sixty years since might have rendered travelling in our thinly peopled country all but impossible for weeks together, is now cleared away or beaten down in a very few days (1856)."

Accommodating the Elements

So in some ways New Englanders had protected themselves better than in the past from the elements. That, Gray continued, was not the whole story. Some other shifts had the opposite effect. They had increased the weather's importance and made it more of a nuisance than before, again making the weather itself appear to have changed. People widely believed that summer droughts in New England had grown longer and more frequent. Again, the belief was an error that had a basis in fact, and it was not surprising that it should have taken root so widely and deeply. Dry spells had not worsened. Rather, in Gray's words, "their effects have become of more consequence." Waterpower from the streams ran the spindles and looms and lathes of the factories that multiplied rapidly across New England in the decades following the War of 1812. One chance result of this industrialization, as Gray pointed out, had been to amplify any drop in stream flow into an economic and social crisis. Declines that had once been too small to attract notice now commanded the full attention of mill owners and of workers, for whom they threatened long spells of unemployment. Even in normal years, the summer flow of the largest rivers was only about a tenth that of the wettest month, no small problem for mills trying to operate year-round. The factories had made every year a drought year.

When possible, they built or enlarged reservoirs to store water for the times of low flow. There were limits to what they could do, however, and many of them by mid-century were adding auxiliary steam power for use when the streams declined. In an age where business competition grew sharper and the clock and calendar more insistent, steam's greater reliability outweighed its greater cost, and more and more mills began to use it exclusively. By late in the nineteenth century, New England industries were using it to meet most of their power needs. The change lessened the role of the weather and the seasons in economic life, only for another change to restore them in a different form beginning in the late nineteenth century. From the start, hydroelectric generating plants required auxiliary power in the form of fossil-fuel powered thermal generation equipment for times when stream flow failed. Drought imposed heavy costs in the form of fuel consumption.

The rise of electricity has given the weather another new role in New England life, giving the frequent wind and ice storms that can bring down wires a potential for disruption that they had not previously possessed. Among its other effects, the great hurricane of 1938, one of the worst weather disasters ever to befall the region, downed thousands of miles of power lines and for weeks deprived many well-to-do households of basic comforts that poorer families enjoyed uninterrupted. The Yale archaeologist A. V. Kidder (1940) pointed out that electrification had in some ways increased vulnerability to the elements: "Think what happened to those of us in New England who lived in the most specialized of modern homes. The electric current failed and we had no heat, no light, no water, no ice. But the farmer continued happily to sit by his stove, and read by his lamp, and pump from his well."

The potential for trouble has increased only as dependence on electricity in ever more areas of life has. The growing importance of computers and television in daily life cause even brief stoppages of current to be noticed more acutely than ever. Ice storms in northern New England in January of 1998 brought down power lines so extensively as to deprive many households of electricity for weeks. Again, a comparison of one period to another underlines the way in which changes in human activity have drastically changed the meaning of recurring weather events. "A hundred years ago," observed the journalist, Donna Gold[1],..."this storm would have been over with the crashing of trees. ... Even 50 years ago, a majority of homes in Maine would have had backup power. ... The old ways were lived close to home, with a barn for an office, not a computer room. But in the last storm, even farmers were stuck without electricity. Modern farming relies on power for milking and processing."

In other ways, of course, the effects of the weather have been lessened. Writing in 1856, Gray was quite correct in saying that the rigors of a New England winter had been greatly softened indoors, the houses "better fortified against cold" than they had been previously. It was still a recent development at the time he was writing. During the first two centuries of settlement, New England houses were heated as houses in the much milder winters of old England were: by the open fireplace and chimney. It was a highly inefficient system. Most of the heat that the fire produced was lost immediately up the chimney, in the process pulling in a steady and chilling breeze from outdoors. One New Englander recalled with a shiver "the current of cold air, that always whistled past every door and window towards the big fire-place to supply the tremendous draught." On a cold day, "everything froze, even in the back part of the room, with the big fire blazing, and the chambers where there were no fires, seemed considerably colder than the out-doors (French 1856)." If an open fire could do little to warm the house in the day, it could not be kept up at all during the night. For two hundred winters or more, the typical New Englander rose in the morning "in a room in which the cold air came through the cracks in the window. If the temperature were twenty degrees below zero outside, it was very little higher inside (Hoar 1903)."

All of that changed abruptly with the advent and rapid spread in the 1820s and 1830s of closed stoves. They burned fuel much more economically than the open fireplace, yet they could raise indoor temperatures far higher. Stoves were soon joined or replaced by central heating from furnaces. Both became bitter grievances to visitors from Old England. Their ancestors had complained of the winter cold in the northern United States. English travelers coming after the change had occurred complained, and loudly, of the stifling heat, of indoor temperatures much higher than they were accustomed to at home. On his first visit to America in 1842, Charles Dickens found his Boston lodgings "made so infernally hot...by means of a furnace and pipes running through the passageways, that we can hardly bear it." Elsewhere he was tormented by the "accursed, suffocating, red-hot demon of a stove." When he returned for a second tour in 1867, he found matters no better, his Boston hotel rooms "so overheated by a great furnace, that they make me faint and sick (House *et al.* 1974; Dickens 1842, 1846, 1870, 1880."

Winter almost from the start had many advantages to offset its discomforts. The cold permitted food preservation in attics and cellars that made for a healthier and more varied winter diet. In an age of horse-drawn vehicles and wretchedly bad roads—bad even in the towns and much more in the countryside—winter was the ideal time for travel and transportation. The snow, once drifts were beaten down, provided a perfect surface for easy hauling of heavy loads or for speedy pleasure rides by sleigh. "Before the railways," wrote one New Englander who had seen the transition, "most of the traffic was carried on in winter, when the snow made good roads for everybody. Then the farmers, in great numbers, harnessed up their teams, loaded their large double sleighs with their surplus produce...and, with the jingle of merry bells, drove off one or two hundred miles to Boston to sell their loads... (Nichols 1864)."

Changing Technology and Climate

The coming of the railroad, a great step forward in many respects, was a step backward in at least one. It began the process of changing snow from best friend to worst enemy where travel was concerned. Trains from the start were subject to winter *blockades* halting them between or inside stations when the snow fell or drifted too fast to be cleared from the tracks. Other trends made matters worse. As the cities grew, their residents became increasingly dependent on regular deliveries of food, milk, and coal, leading a hand-to-mouth existence that snow blockades could interrupt for days. "That there have been storms of larger extent and more accumulation there is no doubt," observed a Massachusetts newspaper after the great blizzard of February, 1899, "but the conditions are now so different than of yore that the inconvenience is proportionately increased." Snow's inconveniences were worsened as well by the tendency, encouraged by the railroads, for people to live farther from their work than in the past.

The automobile is far more sensitive to winter weather than the train is, and it has done much more to encourage suburbanization and exurbanization that mean a longer and more vulnerable journey to work. Only a few inches of snow are needed to slow traffic and extend delays on roads that are slow at rush hour in any case, to multiply skidding and sliding and accidents. It takes only a few inches on the ground or in the forecast to make the rush-hour commuter trains in the greater Boston area, which ordinarily fill the seats by the time they arrive, standing-room only long before the end of the trip. The time when winter could have been the ideal season on the roads, the time of easiest and speediest travel, now seems remote indeed.

The rising importance of driving in everyday life is probably the single most important reason for modern New Englanders to be unhappy with their wet and snowy climate. Nothing, perhaps, has done more to impel southward those who flee for the winter or even permanently. The ideal climate for almost all automobile-age Americans is that of the Southwest, a dry and, above all, a snowless one. It has not always been so. If New Englanders relocating today are apt to head south, most who left the region in the eighteenth and nineteenth centuries took care to stay in a climate as close to New England's as possible. They settled in upstate New York and the upper Great Lakes states in preference to any lands closer to the equator. "Ohio Fever" and "Michigan Fever," not any rush south, spurred the great exoduses from ante-bellum New England. The emigrants were chiefly farmers; they could not afford to move to a climate drastically different from the one in which they had honed their skills.

Other Uses for Winter

From colonial times well into the nineteenth century, the wind at sea, propelling sailing vessels, was an essential resource for almost all of New England's trade with the rest of the world, and for fishing and whaling besides. Steam, as in industry, replaced it as more reliable even if more costly. The wind blows as strongly as ever, but it is now a resource (and a hazard) chiefly for recreation. With the abandonment of slow wind- or animal-powered travel and transportation, though, fog was made more deadly a weather hazard than it had been in the past. The steam- (and then oil- or diesel-) powered ship, the car, and the airplane are dangerous to operate as earlier modes of travel were not in low visibility: being speedier and creating expectations of speed and punctuality that are not easily adjusted to hazardous conditions. At sea, the increased dangers of collision with other ships or with rocks are only partly offset by radar, foghorns, and other warning devices and by better mapping of the coast. At the same time, they are further magnified by the need to keep regular schedules. Even for navigation by powerboat, though, fog is not necessarily a disadvantage. Like any other element of the environment, it is only welcome or unwelcome depending on what it is that people want to do. Between 1920 and 1933, it was a great help to a booming new sector of the American economy that could carry on key activities under its cover. The Prohibition-era rumrunners of the Northeast coast, recalled a Coast Guard officer who had matched wits with them, "preferred to do business in thick weather, in fog, rain, and blizzards. The dirtier the weather the better they liked it (Waters 1971)."

The repeal of Prohibition put an end to that, but at about the same time bad weather, so-called, was becoming valuable in other new ways. In 1934, a New Hampshire businessman could note how "the 'northeaster,' so dreaded by coastal shipping, is rather a blessing to the skier, since it is a father to most of our heavier snows." Winter sports and recreation were already turning into a major element of the regional economy. They have made anew a resource out of cold and snow, while making its fluctuations more of a hazard. A long and harsh winter, conventionally defined, means a good year for the recreation sector. A mild one interferes disastrously with business.

Winter sports arrived just as another use for winter—along with another hazard from mild winters—was disappearing. Farmers had long cut and stored ice from ponds and streams in the winters for their own use, but it is an early nineteenth century Massachusetts merchant named Frederic Tudor who is credited with discovering its latent value as an article of trade. He was the first to make ice from New England's ponds and rivers a marketable export commodity. By 1850, it was being shipped in large quantities not only to the cities of the Northeast, but to the southern states, Western Europe, the Caribbean, and even India for use in preserving perishable foods and cooling drinks. Supply before the Civil War was drawn mostly from the ponds and small lakes of eastern Massachusetts. The banks of many were lined with ice houses, wooden sheds well insulated with sawdust where the cut blocks were stored for summer. With demand rising, the supply region spread far wider. Ice houses sprouted especially thick and fast along the Kennebec River in Maine, whose output reached several million tons per year by the late nineteenth century. The industry was even ideally timed for providing employment. The work of cutting had to be done during what was otherwise the slow season of the year. Midwinter was when farming and construction were at a standstill, when wages were traditionally lowest, idleness most common, and jobs most urgently needed.

To one observer writing in 1868, it seemed puzzling that the ice of New England had remained so long unexploited as a resource. "These frozen lakes," he wrote, "were each winter covered with gold, but, like that of California, it was long undiscovered." No more could he imagine a time when it would ever be less valuable than it was. "It will never run out," he continued, "since, without plowing or sowing, nature sends the annual crop, which like the manna has only to be gathered, and the market for it is ever increasing" (*Eighty Years*...1868: 387). A plentiful supply of ice was indeed a constant feature of the region's climate. Yet half a century earlier, the business of exploiting it as a marketable resource had only been getting started, and half a century later, it was nearing extinction. First a shift to manufactured ice—much more reliable in supply than the natural article, though it was costlier to make than what nature provided for free—and then the spread of mechanical refrigeration entirely destroyed the natural ice trade.

Economic Geology

It was said often enough to become a cliché in the mid-nineteenth century that New England's great staple resources for export to the rest of the world were ice and granite. The Yankees boasted proudly that their resourcefulness and ingenuity could turn even parts of their surroundings, even those that had seemed at first to be barren and bleak and useless into cash. So too, they had turned to account the waterfalls that at first only blocked navigation on the larger rivers and the trees that encumbered the soil. Like ice, however, granite—and many other substances—rose and fell as a resource though physically undergoing no change.

Beginning in the 1820s, a tremendous demand arose for the hard granite found along the Maine and Massachusetts coasts. Its value was a function of its qualities and its location. It was hard and durable, and it could be floated by schooner to markets along the eastern seaboard to be used for buildings and paving stone. The quarry holes gouged out during that era are still to be seen on the islands of Maine's Penobscot Bay, at Rockport, on Cape Ann, and at Quincy, on Boston's South Shore; but they are filled with water now and surrounded by woods and rusting machinery rather than by the din of activity. A few are briefly reopened from time to time for special jobs, but by and large abandonment has been their fate. Quarrying along the coast did not come to an end because the stone gave out, nor even because steady depletion of the supply had made it costlier to extract. For all practical purposes, there is as much granite available as there ever was. What has changed is not the supply but the demand. Granite is too hard for most purposes, and with reinforced concrete and steel taking its place as materials for building materials and concrete and asphalt for paving, the purposes for which granite itself is used are fewer than they were.

What happened to the ice of the Kennebec and the granite of Quincy is a familiar story in the history of natural resource exploitation anywhere. It has repeated itself with other mineral resources exploited at various times in New England. In each case, the end came, not because the deposits were physically exhausted, but because competition from better quality resources opened elsewhere or technological changes deprived the deposits of much of their value.

Cape Cod by the early nineteenth century was the leading salt-producing area of the United States. The manufacturing process was an ideal blend of cheap and plentiful inputs. Windmills pumped sea water into open-air wooden troughs, with covers that could be closed in wet weather, where evaporation took place under the sun's rays. By the 1830s, the Cape still counted more than four hundred establishments producing salt by this method; but the industry was already beginning a steep and rapid decline from its peak. The wind that powered the pumps did not die down, nor did the ocean become less salty. It was social changes and not environmental ones that made their exploitation a profitless business. The most important was the completion of New York State's Erie Canal, which linked the far richer brine fields of Onondaga County, New York cheaply and directly to the eastern markets that the Cape producers had served.

Iron and copper have been produced from deposits here and there in New England since colonial times, but as industries of any substance, both died out a century ago in the face of competition from better fields in the Great Lakes states. The mineral springs of Vermont, the basis of a thriving summer trade in the mid-nineteenth century, were devalued not so much by competition from richer sources elsewhere as by a general collapse of the belief that they had anything of medical value to offer. Whale oil, used mainly for lighting, was once the chief livelihood of many coastal towns. It received its fatal blow in 1859 from the development of a cheaper illuminant: kerosene, which could be refined from the petroleum discovered in that year in large quantities in Pennsylvania.

New England, it turned out, was not well endowed with resources of any fossil fuel, whether coal, oil, or natural gas. The lack has naturally seemed to be a great misfortune and a serious economic handicap, especially when coupled with a climate that demands space heating for many months of the year. It also spares New England the traumas of the boom-and-bust economy that has characterized oil districts from the first ones in Pennsylvania to the modern fields of Texas and mining districts everywhere. It is perhaps more fortunate than not that none of the mining enterprises of the region, subject to the same kinds of dynamics, was ever of more than local economic importance. There are advantages to being poor in conventional natural resources.

The Form of the Land

On the whole, the landforms of New England have changed little by either human occupance or natural processes since colonial times. In cities, some once-imposing hills were cut down in the eighteenth and nineteenth centuries; Boston's Beacon Hill is but a shrunken remnant of the Trimountain that once dominated the peninsula. Large parts of Boston were reclaimed from the sea by landfill. Some islands have been attached to the mainland, some obliterated or created or reshaped by coastal erosion. As a rule, however, the mountains and hills and valleys, the coasts and the islands are much the same in height and shape as they were four centuries ago. What have not remained the same are the values placed on them and the uses to which they have been put, both of which, on the contrary, have changed kaleidoscopically over time.

Early settlers in the uplands of New England chose the hilltops and the ridges over the valleys for their homes and farms, taking "the high land in preference to the low" as their principle of location (Melville 1845; 1984: 430). Their reasons ranged from the greater ease of clearing the land to the healthier air, as they believed, to the ease of defense against attack. The disadvantages of a hill site, chiefly the remoteness from streams and from the easier routes of trade and travel, were less important than they would become in a period of greater interchange. It was when they began to matter more that a mass movement of population downhill began. Whole villages relocated to the valleys where mills could exploit waterpower at the falls of the streams and where roads connected them more easily with the outside world.

The mill town or factory city itself developed a characteristic residential geography where wealth varied directly with the height of the land: "the typical banded and stratified zonal ordering of better and better houses from the slums in the industrial valley, on Water Street and River Street...up to the massed squires' houses on the Hill (Arensburg 1955: 1157)." The rich enjoyed the views, purer air, safety from floods, and general symbolic prestige of the higher sites. The rise of the automobile, making hill slopes and summits easier of access, has done nothing to lessen their appeal. Elevated sites, with all of their amenities, remain a good index of affluence in metropolitan New England today. Two suburban developers south of Boston in John Updike's novel *Couples* (1968) "didn't sell houses, they sold views (22)."

A return of population to many of the rural mountains began not long after the great abandonment itself. Resorts in the nineteenth century, catering to a small, affluent clientele in summer, have developed into a recreation business serving a mass market. Summer remains the peak season, but fall foliage is now an economic as well as an esthetic resource, and the rise of skiing is another part of the same story, a slope being as necessary to it as snow cover. Possibly the single most important development in twentieth century New England environmental history has been the tremendous increase in the value of certain aspects of the environment for tourism and recreation.

Islands

It is not only mountains that have been revalued upward. The chief qualities that set islands apart from the coastal mainland are their remoteness and separateness, qualities that have been more and less valuable for an array of changing purposes over the years. Driven by changing human wants, a great variety of activities have succeeded one another on the islands of New England. The largest ones, Martha's Vineyard and Nantucket, depended for centuries on livestock raising and fishing and whaling to support their inhabitants. Recreation began to take their place after the middle of the nineteenth century and has proved vastly more lucrative. Its dominance is threatened only by its own success, as summer crowding and over-development jeopardize the very qualities that attracted them in the first place.

City harbor islands have followed a distinctive course of development and change. In the earliest colonial period, they were an easily defensible refuge for settlers from the dangers of attack on the mainland. As the dangers of the mainland diminished, many became sites of defense against the perils of the sea: fortifications to guard against naval attack and lighthouses to guide friendly ships safely into port. As cities grew, with them grew the pressing need to build somewhere various facilities that nonetheless were very hard to site anywhere in particular. Small and isolated, harbor islands were ideally suited to finessing the NIMBY (Not In My Back Yard) dilemma that city officials have had always with them. As many as possible of the facilities wanted in nobody's backyard could be exiled to these tracts without close neighbors. Pest Island off Portsmouth, New

Hampshire got its name from the isolation hospital for contagious diseases that long occupied it; the same use was made of islands off Newport, Rhode Island and off Marblehead and Salem, Massachusetts. By far the most intensive use of harbor islands for such purposes was made in the region's largest city, where noxious facilities were largest and most numerous and NIMBY problems of siting them were most acute. Boston's harbor islands by the late nineteenth century still held some forts and lighthouses, relics of the previous phase of development, but they were for the most part given over to an impressive array of facilities exiled from more populous neighborhoods on shore: prisons, garbage and sewage dumping grounds, poorhouses, quarantines, and contagious disease hospitals.

Not many decades ago, it still often seemed to be the most appropriate use to which such islands should be put. As late as the end of the 1960s, a utility company was proposing to build a nuclear power plant on Cockenoe Island in Long Island Sound off the affluent New York suburb of Westport, Connecticut. As late as the 1980s, a Boston city councilor was suggesting the use of one of the harbor islands for quarantining AIDS patients. Those that were not needed for siting unpopular land uses were often not wanted for any other purpose; abandoned and collapsing institutional buildings rubbed shoulders with crumbling fortifications as grass and vines covered both from view. The islands of Casco Bay, off Portland, Maine, were "unwanted Cinderellas as late as 1960 (Caldwell 1981)." It is said that the state had the chance to buy one of them for the nominal price of a dollar after World War II; passing up the chance, it paid $155,000 in 1972 when it finally decided to make the purchase.

Such islands are unwanted no longer. As transportation has become ever easier and affluence and leisure time have increased, as the problems of remoteness and difficulty of access have been lessened and remoteness itself has become a scarce commodity to be prized, islands have become valuable precisely for their isolation. They are avidly sought for private development and residences when available. By good fortune, many have remained in the hands either of the government or of conservation groups and have remained open to public, in contrast to much of the New England coastline. Many of the Boston harbor islands are now managed by the National Park Service as a national recreation area. People in fast-increasing numbers take advantage of summer ferry boats to explore and enjoy their attractions. They play the role of haven from the metropolis from which they are nonetheless readily accessible.

Beaches

New England's beaches present perhaps the most startling example of a sea-change in the value of any element of the natural environment, an utter transformation in the eyes of their beholders from a wasteland to a paradise. Early attitudes toward them ranged from indifference to hostility, as the landscape historian John Stilgoe documents (1981: 33, 46). "From the first years of settlement until the middle of the nineteenth century, New Englanders dreaded the coastal zone as a wilderness beyond their capacity to shape and to cultivate...classified the beach as 'desert' and viewed the shorelines chiefly with disgust." The coast, along with the mountains, has become the favored place for recreation and the beach itself increasingly the focus. Shorefront property has grown explosively in value. While increasing the value of the seashore, the move to the coasts, in New England as elsewhere, has had another result as well. Coastal development has increased the exposure of lives and property to coastal storms even as their previous chief harm, to shipping, has been much reduced with shipping's decline. A high tide, once chiefly of importance as a resource for navigation over shallow harbor mouths, now matters most as a hazard that can greatly magnify the damage that a hurricane or a nor'easter does to shoreline property. The problem is made worse, of course, by the possibility of climate change, sea level rise, and perhaps an intensification of storm strength. What a changed environment means for human wealth and well-being, no less than what a stable one means, depends on how society behaves and evolves.

Conclusion

Does the natural environment matter ever more or ever less for human societies? It is a long-standing debate. The only safe answer that can be given is that it matters differently. New resources and new hazards, long latent in the regional environment, have appeared and will continue to do so. Others have vanished as the activities that made them resources or hazards have vanished. "One period's asset," as Edward Ullman (1951) wrote, "is another's liability and vice versa." Changes in human life will alter the future's portfolio in ways that we cannot guess. For the environmental determinists had it precisely backward: it is human activities that determine the role that the environment—altered or stable—plays for society.

End Notes

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4

The Place-Name Cover of New England

John E. Harmon

> Place names—whether they belong to provinces, cities, and villages, or are the designations of rivers and mountains—are never mere arbitrary sounds, devoid of meaning. They may always be regarded as records of the past, inviting and rewarding a careful historical interpretation (Taylor 1925: 9).

Toponymy, or the study of place names, has been an area of inquiry in cultural and historical geography for a considerable time. As a branch of a larger field of studies, correctly but not commonly called *onomastics*, the distribution and types of names given to places by a culture is an important element of the cultural landscape of a region. This brief monograph introduces the study of place names in New England.

What is a *Place*?

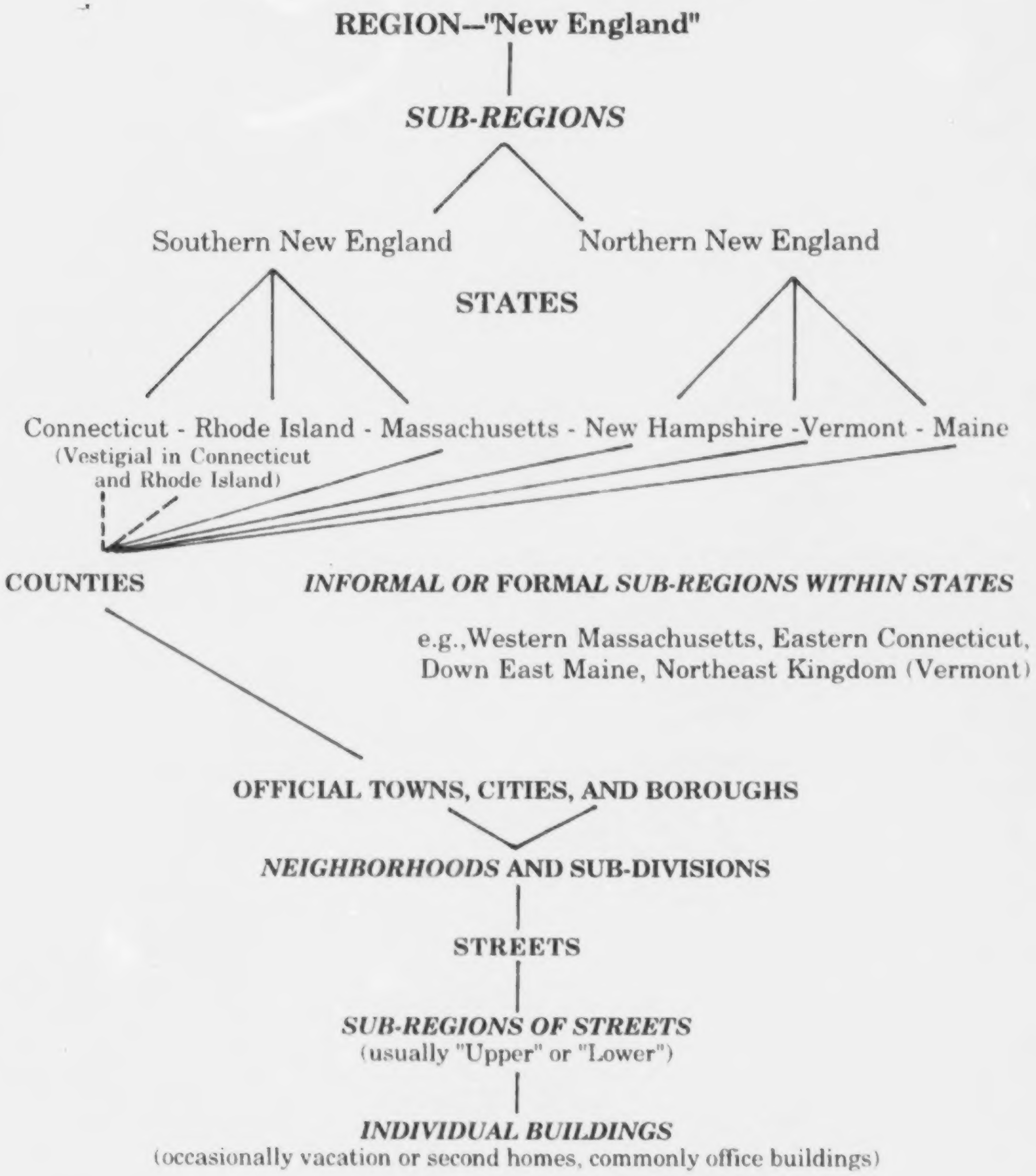
Some who study toponymy concentrate only on named human settlements, current or extinct (e.g., Chadboure 1955; Swift 1977). A more inclusive approach is to cast a far wider net and examine the names for physical features (e.g., streams, lakes, ponds, mountains, as well as settlement (e.g., Rutherford 1970; Hughes and Allen 1976). Finally, a small body of work (none specifically for New England) is available on the nicknames that groups attach to places (e.g., Zelinsky 1980). Taking the broadest possible definition of *place*, names apply to constructs as large as the inhabited world and to locations as small as a street or a single home. This chapter will discuss how named human places are structured in a hierarchy (Figure 4.1). These places usually have official names that are approved for postal delivery purposes and official mapping. They are the official states, counties, cities, towns, post office delivery areas, and streets. Other names for places are informal, do not appear on maps, but which people commonly use in the area. For example, a cluster of streets in West Hartford, Connecticut, is named for the Apollo Seven Astronauts (e.g., Glenn Drive, Grissom Drive) and the entire neighborhood is informally known as Astronaut Village. Because most of the studies of place names in the region have used published map resources or official lists of places as the base, the concentration has been on officially named places and features; the study of nicknames and informal regional names is much less common.

Amerindian Place-Name Cover

Before human settlement places had no names until the settlers gave some sort of nomenclature to the place. With the arrival of the first people in the New England region, they began to attach names to places, but the tribal groups in the region with whom they established contact did not have a naming system similar to the one later used by the English and other European settlers. Generally, they rarely used terms for faraway places but used common names for locations in their own areas of influence. Unlike the English tradition, these names would often change over time. The Connecticut River had at least four different names after 1600, not to mention the more than 50 variations in transliteration of the river's name (Swift 1977). Another difference in naming traditions was that few Amerindian places were named for individuals, partly because people often carried more than one name, and also because tribal identification was more important than personal identity.

Stewart (1945) describes the likely process of place naming as the result of scouting new territories for the people who arrive after the first scouting explorer. They needed concise descriptions of useful landmarks that would help them on the way to the new lands. In reality, we know little about how and why places were named in the pre-European period because of the lack of any written records. Add to this the confusion in transliterating spoken Algonquian words to English and additional mistakes resulting from the inability to communicate effectively and it is easy to understand why we will never know all the names given to places by the tribal groups inhabiting New England at the time of contact.

Figure 4.1: The Toponymic Hierarchy of New England


REGION--"New England"
SUB-REGIONS
Southern New England
Northern New England
STATES
Connecticut - Rhode Island - Massachusetts - New Hampshire -Vermont - Maine
(Vestigial in Connecticut and Rhode Island)
COUNTIES
INFORMAL OR* FORMAL *SUB-REGIONS WITHIN STATES
e.g.,Western Massachusetts, Eastern Connecticut, Down East Maine, Northeast Kingdom (Vermont)
OFFICIAL TOWNS, CITIES, AND BOROUGHS
***NEIGHBORHOODS* AND SUB-DIVISIONS**
STREETS
SUB-REGIONS OF STREETS
(usually "Upper" or "Lower")
INDIVIDUAL BUILDINGS
(occasionally vacation or second homes, commonly office buildings)

*Informal names are in *italics*

Types of names	**Settlements or Political Features** (villages, towns, cities, counties)	**Natural Features** (e.g., brooks, rivers, summits, swamps, lakes)
Personal—are named for individuals or families.	More likely to be named for people in the region or in the nation, particularly of larger places. Smaller places often named for local people. Very common among the *-villes*.	Very common, almost always from local people, rarely from regional, state, or national figures.
Descriptive—are names that mention some property of the place or feature.	Occasional, always positive connotations to the descriptor, e.g., *Fairfield*.	Very common, occasionally with negative connotations, e.g., more than 50 streams' names contain the word *Dead*.
Borrowed-names transplanted from other locations either by migrants or namers wishing to highlight a connection.	Very common, mostly English, some French, and in northern New England transplanted form Southern New England.	Rare, e.g., five streams contain the word *Egypt*. Many of the borrowed names for natural features have Biblical significance.
Replicated-clusters of named places with a common root and different suffixes, e.g., *Hartford*, *East Hartford*, and *West Hartford* (See Zelinsky (1955).	Common in places below counties in the hierarchy, particularly the cardinal directions (*North*, *South*, *East*, and *West* and *Lower*, *Upper*, *Corner*, *Depot*, *Center*, *End*).	Common use of the cardinal directions for *forks* or *branches* of streams and different mountain summits. Names often duplicated, e.g., more than fifty *Roaring Brooks* or *Roaring Branches*.
Portmanteau Names-the creation of a place name forms parts of other names, e.g., *Hadlyme* as a name for a village on the border of *Haddam* and *Lyme*.	Known to be a "peculiarity of Connecticut (Hughes and Allen 1976, XII)" but it occurs in the rest of the region and not so commonly in the rest of the nation.	Rare, except as connected to a place name. e.g., *Harwinton Lake*.
Natural Environment	Occasional use of trees, natural features e.g., *bays*, *rivers* in place names. Common in cemetery names.	Very common, particular associations of certain trees with streams and swamps, e.g., *Cedar Swamp*.
Amerindian	Occasional with many spelling variants.	Occasional
Distance from a local reference	Never (?)	Occasional, particularly with streams, e.g., *Twomile* to *Twentymile Stream*, *Brook*, or *River*, based on the approximate distance from some local reference point, but not farther than twenty miles.
The *Villes*— e.g., the generic suffix of *-ville* attached to a root name	Common; most were established between the Revolution and during the nineteenth century (Grant 1966, Ch. 2). Common also in the rest of the Northeast.	Occasional, but only reference to the settlement.

Figure 4.2: Summary of Naming Practices—Settlements and Natural Features

Hughes and Allen (1976, 734) put it this way: "...almost complete chaos rather than bedrock underlies the whole structure of the interpretation of Indian place names."

Surviving Amerindian place names are relatively few in the region. Most names in use today are English in origin, a few of French origin, and a scattering of other European origins (Huden 1962). Although slightly more than half the states in the United States have names with Amerindian origins, only two of the six states in New England, Connecticut and Massachusetts (*see* above) are Amerindian. Approximately the same ratio holds for counties with Amerindian names in the region, only eight out of 67, all in northern New England (Figure 4.2). The prevalence of Amerindian place names remaining also depends on how the settlers bargained for the land during the contact period. In southern New England and New Hampshire pioneers bargained directly for land and the use of Amerindian place names obtained from grants, deed, and treaties are common. In the northern parts of the region the newcomers dealt with government agencies because the native population had mostly been killed off or driven out by the time of settlement, so Amerindian place names are less common.

Some Specific Names in the Toponymic Hierarchy

Region

The European, mostly English, migrants who came to this region in the seventeenth and eighteenth centuries named most of the places and features. Many of these names were copies from English places—the name for the region itself, New England, is an example of a borrowed name and originally included what are now the maritime provinces of Canada in its extent. John Smith was the first to use the term and it was popularized in his 1616 book, *A Description of New England.* New France and New Spain were in use at that time and he was aware of Sir Francis Drake's naming of the California coast as Nova Albion. There was also political value in maintaining such territorial claims since the Dutch were using New Netherlands.

States

The names of the six states of the region have unique and sometimes contested origins:

- *Connecticut.* The name is derived from Quinnehtukqut, also Quinetucquet, Quinnihicut, etc. "country at the long river" in several Algonquian dialects; at least fifty different spellings of the word have been found.
- *Massachusetts.* The name is derived from Massachuset, a village, with its exact location not known but possibly the region of Blue Hills or the Milton Hills, "at the great hills," or "at the range of hills."
- *Maine.* One source claims it was named for the French province north of the Loire Valley but adds that the origin is not really known. Before 1500 French explorers referred to the area west of the Kennebec River as Maine and the area east as Acadia (Harder 1976). Another claims that in the seventeenth century "the main" or "the maine" was a term used to mean open sea or the continent, much the same as we use mainland today. A need arose to refer to "The Maine" (Chadbourne 1955, restated in Stewart (1970) because of the many islands located along the coast of Maine. The wording of the Council of New England's 1622 grant to Capt. John Mason and Sir Ferdinando George gave them rights to "all that part of ye maine land in New England," with some specific boundaries. Stewart (1970) says that the official name fell into disuse soon after that, but it was used popularly." In 1820 Maine became a state with that name.
- *New Hampshire.* Named by Capt. John Mason for the English county of Hampshire. Mason received a grant in 1629 for a portion of what became New Hampshire. He had been mayor of Portsmouth, England, which is in Hampshire County (Stewart 1970; Harder 1976).
- *Rhode Island.* The name has two possible explanations. The first claims that Verrazzano (1524) may have sighted Aquidneck Island that he thought was about the size of the Isle of Rhodes in the eastern Mediterranean. The British called the island Aquidneck until 1744 when they changed the name to the "Isle of Rhodes." The second documented possibility is the Dutch

explorer Adriaen Block who named the island *Roodt Eylandt* ["Red Island" in Dutch] (Trumbull 1912). Stewart (1970) says that the spelling of the word suggests the Verrazzano explanation, but the Dutch mention may have influenced the choice. As a colony and later as a state, the official name is "Rhode Island and Providence Plantations."

- *Vermont.* Name derived from French components, *verts* and *monts*, meaning "green mountains."

Sub-Regions within New England

Early settlers were concerned with naming their own local places but gradually they had a need to refer to groups of places, smaller than states, by name. The names given to these regions are not official in that they do not appear on government maps but they have names and identities just as officially named regions do. These regions are often referred to as *vernacular regions* and have become a topic for study only within the last thirty years. The names often contain the prefix *the*, as in The Cape, referring to the Cape Cod Region, and are important in defining regions for outsiders. New England contains many of these vernacular or popularly-defined regions and some of them are marked on Figure 4.3.

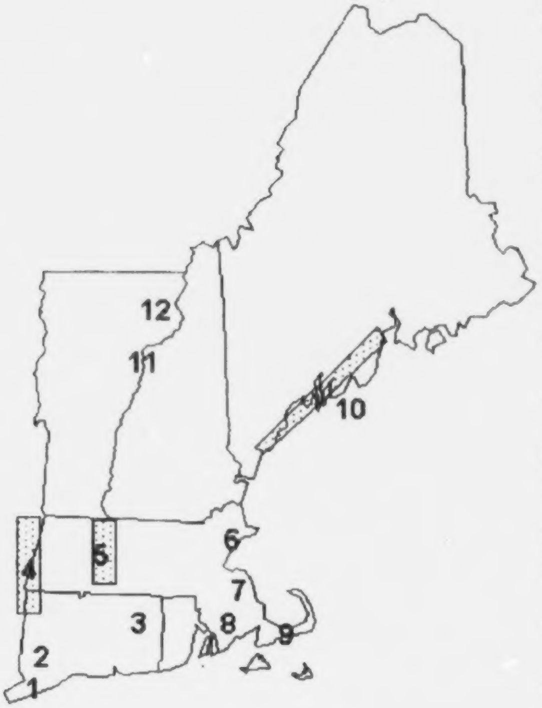


Figure 4.3: Vernacular Regions within New England

Selected Vernacular Regions of New England

1. *The Gold Coast.* Local residents do not commonly use this term but outsiders often refer to it as such.
2. *The Valley.* Many other valleys are in the region but this valley has a special meaning in Connecticut as a working class, industrial region.
3. *The Quiet Corner.* This is a fairly new vernacular name, currently growing in popularity.
4. *The Berkshires.* People outside this mountain range frequently use this name.
5. *The Pioneer Valley.* The Connecticut River valley has several vernacular names within its extent.
6. *The North Shore.* Refers to communities north of the core of Boston.
7. *The South Shore.* Refers to communities south of the core of Boston.
8. *The Old Colony.* This name is a historic remnant dating to the division of the Massachusetts Bay Colony.
9. *The Cape.* Although many places have names beginning with cape, *The Cape* is the only one that refers to Cape Cod.
10. *Down East.* Principally used in the tourist coast of Maine.
11. *The Upper Valley.* This name refers to a few communities around the Connecticut River in northern Vermont and New Hampshire.
12. *The Northeast Kingdom.* Refers to the rural and sparsely inhabited regions of northeastern Vermont.

Notes: Many smaller vernacular regions lie within New England and the region is also in the overlap of many national-scale vernacular regions, e.g., *The Northeast* (*see* Zelinsky 1980 and Harmon 1984).

Counties

At the next level of official names are the counties of the New England region. Politically, counties are not important in all the states anymore (or seem to be less important than comparable local government units, e.g., counties, parishes, elsewhere in the United States). The names however, remain official and the federal government uses them in data gathering and reporting. The place names for the counties fall into a small set of discrete categories:

- Descriptive names—places named for some feature of the place. Fairfield, Connecticut; Grand Isle, Vermont; New Haven, Connecticut.
- English counties, villages, towns or cities—Hartford, Connecticut; Bristol, Rhode Island; Norfolk, Massachusetts. This custom of transplanting place names continued within New England as people moved from the southern colonies to northern regions.
- English nobility—Cumberland, Maine; Grafton, New Hampshire; Hillsborough, New Hampshire; York, Maine.
- Other English leaders—Windham, Vermont; Rockingham, New Hampshire.
- Colonial or American heroes or leaders—Washington, Rhode Island, Maine, Vermont; Hancock, Maine; Franklin, Vermont, Maine.

Towns, Cities and Boroughs

The political geography of New England is based on the primacy of home rule and the paramount importance that the *town* carries (as *counties* carry elsewhere in the United States) for its residents. Although this attachment to small places is stronger in the southern half of the region, the question of "What town are you from?" is important throughout the region. The New England *town* is not the *township* of the rest of the country. Nor is it the same as a *village* since a town may contain several villages. Rather it is an organizing concept unique to the region and usually the town is the most important place with which people identify. Within towns are often smaller districts, and within those districts individual streets will be named places and the occasional important building will have a locally known name.

The large number of these places makes it difficult, if not impossible, to make generalizing statements about the sources of their names. Figure 4.2 notes some of the common practices and also compares the practices between settlements and natural features. The amount and quality of information about these smaller named places vary in the region. Some states have excellent sources of information (Connecticut: Hughes and Allen 1976; Vermont: Swift 1977; Maine: Chadbourne 1955, Rutherford 1970). Others (New Hampshire with two on the White Mountains: Hixon and Hixon 1980; Mudge 1992; and Rhode Island: Parsons 1886, Trumbull 1912) have little or only localized information, and Massachusetts is somewhere in between (Davis 1987—merely a listing with no source information and other fugitive sources such as Federal Writers Project 1941 on the origin of Massachusetts place names).

One common place-naming process borrowed from English practices is the widespread use of replicated place names. First among these was the addition of the directions of the compass to a place name as migrants left the original place to create new, often nearby, communities. Not only is there a Hartford, Connecticut but also a West Hartford, East Hartford, and New Hartford. This practice extended to neighborhoods—a North End and South End within the city of Hartford. The fine distinctions among these replicated names can have great importance locally. Any long-term resident of the Boston region knows the substantial differences between the communities of the South End and South Boston or Southie. This naming practice was carried westward by outmigrants and is common well into the Midwest, but not in the South or West (Zelinsky 1955).

Several towns and cities in the region were named *New* in honor of a foreign city or place (New London, Connecticut; New Gloucester, Maine), and the addition of *New* to a place settled by migrants from an existing place in the region is also common. Another common practice was the addition of the suffix or prefix *Center* to an existing place. In smaller communities, the principal shopping area is usually referred to as *The Center*, in larger places *Downtown* is more prevalent. In addition to the cardinal directions and the indications of time of settlement and centrality, the replicated names occasionally include *Upper* (21), *Lower* and, upon arrival of the railroad, a few *Depots* (12).

Another New England community-naming practice demonstrates the close relationship between place naming and the structure of the contemporary economy. Place-naming practices of agricultural, pre-industrial New England were quite varied but with the onset of water power-based industrialization a new and apparently foreign practice of attaching the suffix *-ville* to a root name became customary in the region. Although one can find hundreds of *-villes* in New England, they are particularly common and dense in the original manufacturing core of the region (Southeastern Massachusetts and Rhode Island) and less so in New Hampshire and Maine. Most often they were named for the founding industrialist (Batesville, Maine; Blanchardville, Massachusetts), but occasionally for the product (Augerville, Connecticut; Cannonville, Maine) and for significant events (several Unionvilles and a Tariffville, Connecticut for an import tax on carpeting). The adoption of this Gallic suffix was not always a simple process. Samuel Collins, founder of Collinsville, Connecticut, vigorously objected to its name and would have preferred "Collinsford" or "Valley Forge" (Grant 1996: 26).

As the population moved from agricultural and industrial villages to cities and suburbs, new types of places needed names—neighborhoods, subdivisions, and streets. Neighborhood names often do not appear on maps, subdivision names are usually important only during the process of establishment and are not widely used afterwards unless they become accepted neighborhoods, so little work has been done on these smaller named places. The names of streets, however, are mapped and available in several digital forms. The street-naming practices of New England do not appear to be much different from other regions (except for the prevalence of number or letter streets in many grid-patterned cities). Since Philadelphia, Pennsylvania first used a set of trees for street names (Gilpin 1970), other cities have adopted the practice. Almost one street in sixteen in the region is named for a type of tree with *Pine* and *Oak* accounting for one-quarter of those names. Many streets are named for individuals with some evidence that male names are more dominant than female names. Names with agricultural references are widespread, particularly the use of many suffixes related to English agriculture, e.g., *-mead, -meadow, -hurst* (Middle English for wood or wooded area, hillock, knoll).

The street-naming activities of the region are more varied than the place-naming practices and locals offer tremendous resistance, as elsewhere, to renaming streets or places once they have received a name. This concern for renaming is now most prevalent in the more rural states of northern New England as they are being required to provide formal names for roads to meet emergency service 911 needs. Since subdivisions are still being built in the region, naming streets and subdivisions is practically the only situation where new place names are being created, and it seems that New England is much different from the rest of the nation in how it names its streets.

Natural Features

Some work has been done on the understanding of the geographic distribution of the named natural features in the region. Krim (1980) wrote on the natural features in the Boston region and Harmon (1991) examined how trees and other natural features appear in the street name cover of the region. Naming natural features is usually a local process, except for the occasional feature like a very large river or mountain that is commonly known. Because of the extreme locality of these namings, much of the history of their names probably still hides in the large number of local histories written and published in the region. Much of the information about the sources of names is not well documented so large gaps exist in knowledge about the place-name cover of these small natural features.

Conclusion

It may seem a paradox, but the place-name cover of New England is both over-studied and understudied. It is over-studied in the sense that in some places individuals have devoted lifelong studies on the detailed exposition of the place-name cover of a small or state-sized region. So what seems to some like excessive detail is available only for some places. The Amerindian place-name cover also received its fair share of attention from individuals whose chase of elusive facts has often led them to some bold statements that may not be accurate. The regional toponymy is understudied in that most of the research has been done on the places settled during the agricultural and mill village industrial eras of the regional economy. In the last 100 years most of the region's population has settled in the cities and suburbs and little has been accumulated about the names of hundreds of neighborhoods, sub-divisions, and streets of these places. Because of its long settlement history and the strong interest in local history, we know more about the place-name cover of this region than of any other region of the country. Since those factors are not likely to change, we will probably know even more in the future.

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5

NEIGHBORHOODS IN THE "WALKING CITY" OF BOSTON

Janet Duncan

Every day people come to the city of Boston to work, shop, visit, learn, play or receive special services. Every day the population of the city doubles as more than one-half million people come into the city for the amenities that are packed into the small geographic area of Boston. As the Boston Redevelopment Authority has shown in its 1996 report, by far the largest number are commuters who work in the city.[1] Boston currently employs one out of every six workers in the state and most of them live outside the city. Joining the daily commute are nearly 44,500 students despite the fact that twice as many live in dormitories or apartments in the city. Also joining the daily commute are more than 31,800 visitors to the city's hospitals, which are nationally and internationally recognized centers for health care, research, and development of new techniques and technology. Adding to the population is an average of 14,000 overnight hotel guests who may be in the city for business, conventions or tourism. Then there are those who come in to shop: an estimated 52,000 each day not counting all those who are already in the city for other reasons. To all these can be added the people who come into Boston for special occasions such as sporting events at Fenway Park, the Fleet Center, or the Boston Marathon. The Museum of Science, the Museum of Fine Arts, and the New England Aquarium are all major attractions as are concerts at Symphony Hall or on the Esplanade. Altogether the daily population of the city rises from 574,000 to 1.17 million. Although the ability to attract people is important to the economic life of the city, it does create major transportation issues and problems (BRA 1997).

City Characteristics

Though the city of Boston ranks only twentieth in the country by population size, the Metropolitan Area ranks seventh and extends from southern Maine and New Hampshire to the borders of Connecticut and Rhode Island (BRA 1994). Its 5.6 million people (est. 1996) make up the largest metropolitan area in New England. However, Boston could never have become the center of a metropolis without making major changes in its site by modifying or reducing hills, filling bays, and reclaiming waterfronts in order to enlarge the original peninsula on which it was located and to improve connections with the mainland. It had to develop transportation connections by land, water, rail, and air on newly-reclaimed land mainly for these purposes. Boston has always been known for its major public works projects, particularly the filling of the Back Bay, and it is currently undergoing

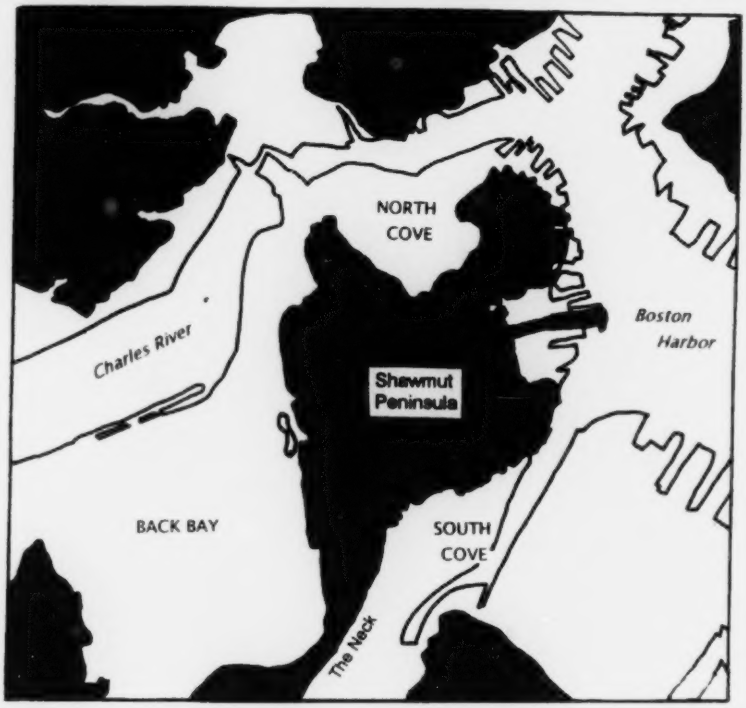

Fig. 5.1: Boston: Early Shoreline & Landfill

another major public works project known as the Big Dig (Fig. 5.1). In the past most of these projects involved adding land to the city but this time most of the work is under ground. A new central artery and tunnel to the airport was needed to accommodate the daily flow of traffic into the city. When the Big Dig is completed, the central artery will be demolished, the city re-connected with its waterfront, and a long strip of open space will provide 25 acres of new land use opportunities.

Boston today is a major center of employment in New England and one of only three cities in the country with more jobs than residents (the others being Washington D.C. and San Francisco, Calif.) (BRA 1997). It is known for its financial, educational, and medical services. It is also known for its skilled labor and technological industries. Boston, however, is also a place that has had different functions at different stages in its growth and development. Its site was selected by John Winthrop in 1630 because of its fresh water supplies and suitability for a port. For the first 200 years sailing ships unloaded their cargo at Long Wharf, colonists traveled to the port for provisions, and merchants traded in the city (Fig. 5.2). Bostonians made money distilling rum and selling it to slave traders and later they brought tea and silks from China and even iron from Russia. The next hundred years, from the mid-nineteenth century on, brought immigrants and industries to the city and

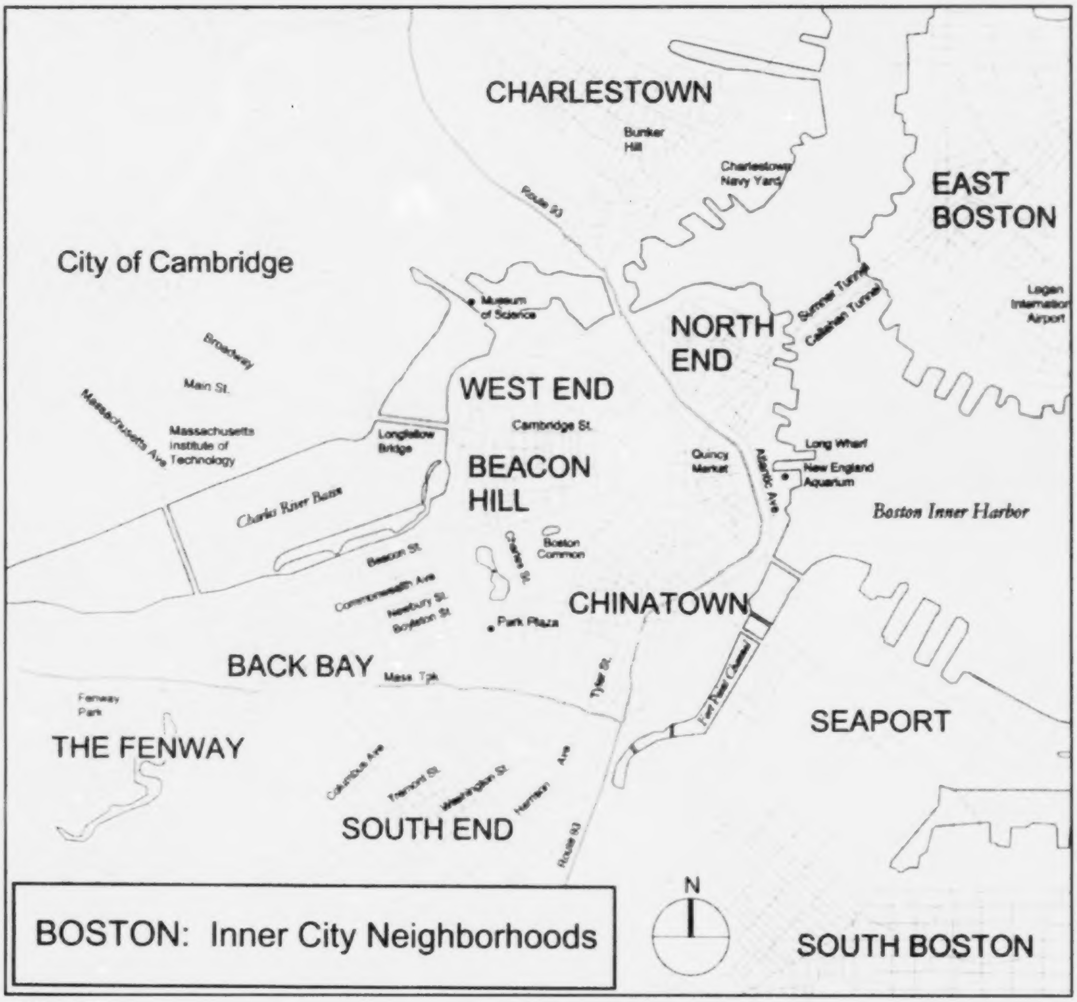
CHARLESTOWN
Bunker Hill
Charlestown Navy Yard
Route 93
EAST BOSTON
City of Cambridge
Museum of Science
Sumner Tunnel
Callahan Tunnel
Logan International Airport
NORTH END
Broadway
Main St.
WEST END
Massachusetts Ave
Massachusetts Institute of Technology
Longfellow Bridge
Cambridge St.
BEACON HILL
Quincy Market
Atlantic Ave.
Long Wharf
New England Aquarium
Boston Inner Harbor
Charles River Basin
Beacon St.
Charles St.
Boston Common
Commonwealth Ave
Newbury St.
Boylston St.
Park Plaza
CHINATOWN
BACK BAY
Mass. Tpk.
Tyler St.
Fort Point Channel
Fenway Park
THE FENWAY
SEAPORT
Columbus Ave
Tremont St.
Washington St.
Harrison Ave
SOUTH END
Route 93
BOSTON: Inner City Neighborhoods
N
SOUTH BOSTON

Fig. 5.2

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its newly constructed suburbs. Money accumulated from trading was invested in company towns for manufacturing textiles and shoes. These industries slowly declined in importance from the 1930s to the 1950s as they moved south into other states and later overseas. In their place the electronics industries grew and became associated with the universities and Route 128. The 1960s and 1970s brought a huge expansion of service activities as the baby boomers sought space in the universities and the education-technology alliance grew. This period also saw the growth of medical services and financial services and the emergence of Boston as an information city.

As an historic city and a port city, Boston was also an immigrant city. The early settlers were Puritans from England seeking religious freedom. These early English families became known as the Proper Bostonians or Yankees and they dominated the economic and social life of the city. They were later joined by others of northwest European origin who were attracted to the early cultural and educational institutions. The Irish refugees poured into the city in the 1840s and they had a difficult time while the city adjusted to their presence. By the 1890s a new wave of immigrants, the British Canadians, came to Boston. They were quickly followed by Germans, Italians, and Jewish refugees of Russian and East European origin. Immigration slowed after 1920 and was thereafter based on a country quota allocated on the basis of nationalities represented in the 1920 census. Changes in the immigration laws in 1965 brought an enormous shift in the composition of Boston's immigrants with Asians forming the fastest growing group followed by Hispanic peoples from many different nations.

The story of Boston can also be told through its neighborhoods, each of which evolved in different ways as the city expanded. Each one provides reminders of the past: the North End of the Colonial city, Beacon Hill of the Federal period, and the Back Bay and South End of the Victorian era. The neighborhoods are also reminders of the immigrants who have left their mark on the city; most notably the Irish and Italians in the North End, the Chinese in Chinatown, and the Yankees on Beacon Hill. Each tells part of the story of Boston. Not all of Boston's neighborhoods could be included in this essay. Those selected are contiguous to the downtown area and most frequently visited by those exploring the *walking city*. The neighborhoods beyond the walking zone were early towns that were later annexed to Boston (such as East Boston, South Boston, and Charlestown) or those commonly known as the streetcar suburbs (such as Roxbury, Dorchester, Jamaica Plain, Hyde Park, Roslindale, or West Roxbury) where the development of transportation opened up the land for housing development. Boston's inner neighborhoods are shown on Fig. 5.2.

The North End

The North End has many visitors because it is linked to the downtown by the Freedom Trail, has many sites of historic interest, and is known for its Italian identity and restaurants. It is a densely settled neighborhood of young professionals, older Italian families, and recent immigrants. It is also a bustling and busy area of stores and restaurants. Tourists and businesspersons go about their daily business amid pedestrian and automobile traffic. Today the North End is cut off from the downtown area by the central artery, Route 93, and the Big Dig transportation construction, although it can still be reached by a well-marked pedestrian underpass. In the future, after the Big Dig is completed, it will be rejoined with the downtown core (Figs. 5.2, 5.3).

The *North End* is the oldest residential area of the city. The first colonial residents were merchants, many of whom purchased land on the waterfront. They constructed small wharves along a shoreline that was close to the current Commercial and Wharf Streets. As the area developed, three long streets evolved close to the current alignments of Salem, Hanover, and North Streets (the last-named crosses the Sumner and Callahan Tunnels). Many small side lanes also wove through the residential areas.

Little remains of the colonial North End except for the Paul Revere House on North Street, which was built as a farmhouse in 1680, and still stands as a popular tourist attraction.[24] Houses built at that time were tightly packed together with few windows and little light. They were constructed of wood and heated with wood-burning stoves. Stores were confined to the main streets after a fire

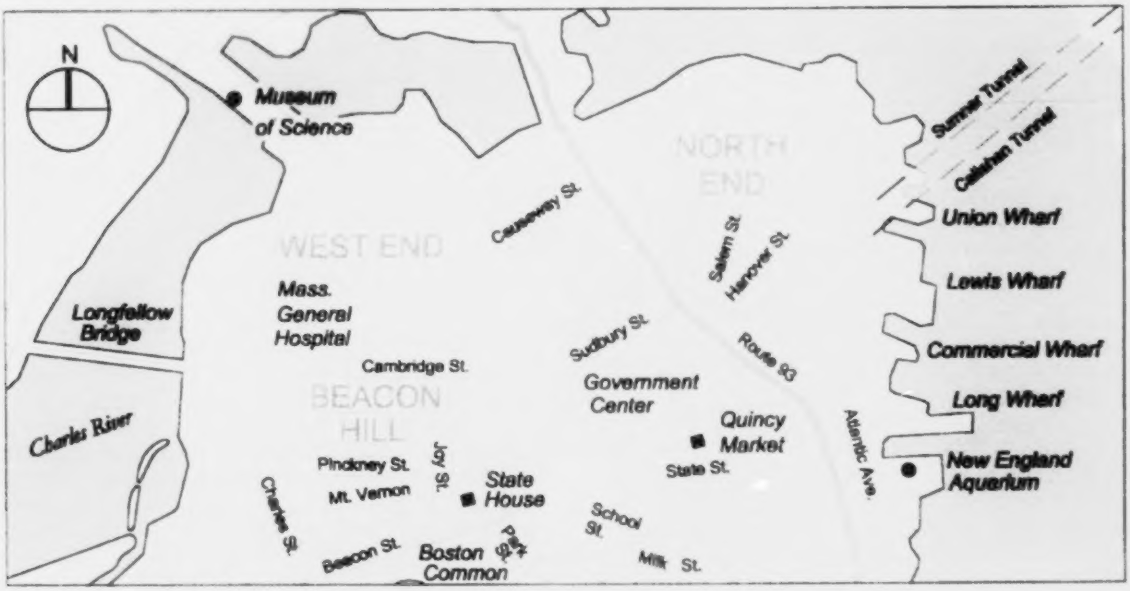
N
Museum of Science
Sumner Tunnel
Callahan Tunnel
NORTH END
WEST END
Causeway St.
Union Wharf
Salem St.
Hanover St.
Lewis Wharf
Longfellow Bridge
Mass. General Hospital
Sudbury St.
Route 93
Commercial Wharf
Cambridge St.
Government Center
Long Wharf
BEACON HILL
Charles River
Quincy Market
Atlantic Ave.
Pinckney St.
Joy St.
State St.
New England Aquarium
Mt. Vernon
State House
Charles St.
School St.
Beacon St.
Boston Common
Park St.
Milk St.

Fig. 5.3: West End, North End, Beacon Hill

in 1676 and gradually more buildings were constructed of stone or brick. The popularity of the North End as a fashionable residential area, close to the waterfront and the main business area, remained until after the Revolution when loyalists migrated to Canada and new residential areas developed in the West End and Beacon Hill (*The North End*, Boston 2000 Corporation 1976).

The nineteenth century brought many immigrants, and a limited supply of residential housing caused extreme overcrowding. Irish immigrants often lived in tight quarters with an entire family packed into one room. Old wooden buildings were quickly replaced with tenements, and apartments were constructed in the 1820s on land newly reclaimed from the Old Mill Pond. By 1840 the Irish, (popularly known as the Dearos) were heavily concentrated in the North End (*The North End*, Boston Corporation 2000 1976). Many found employment as day laborers on the docks and others were employed as servants, craftspersons, and construction workers. Gradually the more successful workers were able to move to the suburbs, making way for new immigrants who were looking for housing in the 1870s. For a few decades Polish and Russian Jews lived in the area bounded by Salem, Endicott, and Prince Streets (northwest portion of the North End) while the Italians also established a presence in the area. By the beginning of the twentieth century Italians began to dominate the neighborhood. They brought their customs, language, rituals, and cuisine from Italy and their family-centered lifestyle sustained generations of immigrants.

The 1950s and the 1960s brought changes and challenges. The Sumner and Callahan tunnels to the airport involved the destruction of stores and housing and created a barrier to traffic. In the 1950s the North End narrowly avoided becoming an urban renewal area like its neighbor in the West End. At that time many of the apartments were cold-water walk-ups considered to be slums in need of renewal. Changes of a different sort began in the 1970s with the renewal of Faneuil Hall and the Quincy markets, the development of a waterfront plan and renewed interest in the North End waterfront. Fashionable restaurants opened, buildings were converted to condominiums and the profile of the North End began to change. (Kennedy 1992).

Today the old cold-storage warehouses on Commercial Wharf, Eastern Wharf, and Lincoln Wharf (between the Sumner and Callahan Tunnels) and others have been converted to a lively mix of offices, condominiums, and retail space including restaurants. The Coast Guard base (north of the

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Sumner Tunnel) marks the end of the waterfront gentrification and it is a reminder of the importance of the waterfront to the North End.

Beacon Hill

Beacon Hill was originally a ridge of three hills used for pasture land and as a lookout with a beacon to warn residents of danger (although it may never have been used). Different parts of the ridge had different names (Figs. 5.2, 5.3). The highest central peak was Mt. Beacon, to the west was Mt. Vernon (also known as Mt. Whoredom), and the east was Mt. Cotton also known as Mt. Pemberton. The lower slopes of Mt. Beacon and Mt. Cotton gradually attracted the country estates of such notables as Peter Faneuil, Thomas Hancock, and John Singleton Copley. Mt. Vernon's lower slopes became a waterfront community with a dubious character and reputation for entertaining sailors (Moore 1992).

By 1795 the cornerstone was laid for the construction of the new State House on Beacon Hill (Fig. 5.3). It was designed by the famous architect Charles Bulfinch and became the trend setter for other state houses and the national capitol. This marked the beginning of the physical changes brought to the Beacon Hill area as it was mined for gravel and fill, the top was reduced by 60 feet (18.3 meters), and then developed for housing. Much of the fill was used to reclaim the North Cove. The pattern was soon repeated on Mt. Vernon with the fill being used to lay out Charles Street at the base and some land beyond. Gradually what had been three hills now looked more like one with Pinckney and Mt. Vernon Streets aligned along the ridge and cross streets leading up the North and South slopes. The slopes of Mt. Cotton were also mined for fill and leveled for the construction of Pemberton Square and the old Suffolk County courthouse (Whitehill 1959).

The housing developed on Beacon Hill contained a wide diversity of styles. On the top were the early mansions, many of which disappeared as land became more valuable. Double houses became popular and examples can be seen today on Beacon, Chestnut and Mt. Vernon Streets. Most common were the single family townhouses, many of which were built between 1800 and the 1840s. Louisburg Square was laid out in 1826 with a central fenced park, cobblestone road and brick bow fronts were constructed over the next two decades (Moore 1992).

Over time different parts of Beacon Hill developed differently. The steep side of the hill facing Massachusetts General Hospital was initially known as West Boston and at one time consisted of small, wood-frame houses. Most of these were replaced as Bowdoin, Temple, and Hancock Streets were developed. Joy Street was the center of Boston's small black community and later became the center for the antislavery movement (the Museum of Afro-American History is now located on this street). Tenement housing near Cambridge Street mirrored those in the West End and immigrant groups spilled over into this area, including the Irish, Italians, and Russian Jews (Figs. 5.2, 5.3).

On the opposite side of the hill, Charles Street was developed in the early 1900s with a connection to Cambridge via the old Longfellow Bridge (Fig. 5.3). Gradually this became the main shopping street and service center for Beacon Hill as a mix of commercial and residential buildings were constructed. Beyond Charles Street on an area referred to as "the flats," River and Brimmer Streets were built on reclaimed land. Hidden away are Charles River and Otis Squares that were once waterfront property. Out of scale on the flats is River House, a six-story apartment complex of the 1950s.

By the 1850s Beacon Hill was fully developed and achieved its greatest reputation as a home for wealthy merchants, writers, architects, abolitionists, politicians, historians, philanthropists, and artists. It became known as the home of the Boston Brahmins whose elegant lifestyles were expressed in the interiors of the townhouses with their imported furniture, Chinese porcelains, and life-size portraits by John Copley and others. As the Back Bay was developed, however, it began to lose its appeal to the wealthy (Fig. 5.2).

By 1910 the tenements of the West End side of Beacon Hill had become lodging houses and the density of population increased. Some old buildings were replaced and some attempt was made to replace brick sidewalks. Despite the exodus of many to suburbia in the 1950s and 1960s, enough people valued the amenities of Beacon Hill, its historic houses, and elegant streetscapes to keep the neighborhood from deterioration. In 1955 it was designated an historic district and in 1963 the area became a National Historic Landmark (Kennedy 1992).

The many tourists who walk Beacon Hill today can find cobblestone streets and alleys, elegant wrought-iron fences, window balconies and railings, gas lights, window boxes, brass door knockers, and violet-tinted windows. What the tourist does not see are the elegantly restored interiors, the many walled gardens, roof decks, and conservatories. Many buildings had been converted to small condominiums in the 1980s but some are now being restored as town houses. Members of the Massachusetts General Hospital community of doctors and other specialists find their homes here along with students, retirees and young professionals. The area was once home to President Kennedy and now the two current state senators and other politicians reside here.

Back Bay

Once the mud flats of the Charles River's estuary, this area to the west of the Public Garden was filled between 1856 and 1886 to make way for the middle- and upper-middle class housing. Victorian townhouses were constructed and planned along European lines with a wide French-style boulevard known as Commonwealth Avenue bordered by four long parallel streets (Figs. 5.2, 5.4). Along with Beacon Hill, the Back Bay makes up Boston's most fashionable residential area and it is an historic district, notable for its Victorian architecture and Victorian elegance.

The filling of the Back Bay marked a turning point for Boston. Until this stage Boston was small, provincial and largely confined to the original Shawmut peninsula that is shown in Figure 5.1. Now the city added as much as fifty percent to its land area and became firmly connected to the mainland. At the time this was the largest public works project undertaken by any American city and it could not have happened without the railroad. In the end, 450 acres (182 ha or 0.70 sq. mi.) of land were covered to an average depth of twenty feet or approximately 6 meters (Bunting 1967:166). Contractors brought in fill by rail from Needham Heights and the land was auctioned off by the Commonwealth. The filling began at the edge of Charles Street and progressed steadily west with new streets and fill moving ahead of the builders. Houses were not built sequentially but were constructed in pairs or small groups with blank outside walls. Eventually they would acquire neighbors and the blocks would gradually be completed. North of Boylston Street only residential and cultural uses were approved with commercial uses confined to Boylston and Newbury Streets. South of Boylston Street the street pattern is parallel to the railroads. Two squares were designed to accommodate the angle created by these streets: Copley Square at the intersection of Huntington Avenue (south of Boylston Street) and Park Square at the intersection of Columbus Avenue. Here at the squares and along Huntington Avenue the cultural institutions such as the Public Library, the Museum of Natural History, the Boston Symphony, and the Museum of Fine Arts found homes. The wealth generated during the Victorian period by manufacturing and the railroads led to great vitality. The city expanded in all directions through reclamation and annexation. The cultural and educational institutions flourished and supported growth in the arts and letters. All this was evident in the Back Bay (Fig. 5.2).

By the 1950s, the Back Bay was no longer a place of exclusively wealthy residents but included many student rental apartments. It took until the 1970s for condominium conversion to bring major renovations and restoration. Now with many condominiums selling for more than one million dollars, the area is once again the province of the wealthy, the young professionals, and older families. It is one of the most sought-after sections of the city with prices rising in proximity to the Public Garden and the river. Newbury and Boylston Streets contain the upscale stores, art galleries, restaurants, and hair stylists associated with the area, and tucked away on the residential streets are famous clubs and societies long associated with the Back Bay. On the interface between the Back Bay and the South End are the hotels of Copley Place (such as the Westin and Marriott Hotels) and institutions on Huntington Avenue (such as the Christian Science Church and Symphony Hall) that serve as a buffer zone between the two areas. From the hotels, the amenities and institutions of the Back Bay and the tourist attractions of Copley Square are all accessible within walking distance.

Chinatown

Chinatown is a small neighborhood of twenty-eight blocks, tightly packed between the Theater District, the Tufts New England Medical Center, The Big Dig (Central Artery), and the Massachusetts Turnpike (Figs. 5.2, 5.4). It may be small but it is the third largest Chinatown in the United States (after San Francisco and New York), and it is an important area of racial and cultural identification for the Chinese living in the Greater Boston area.

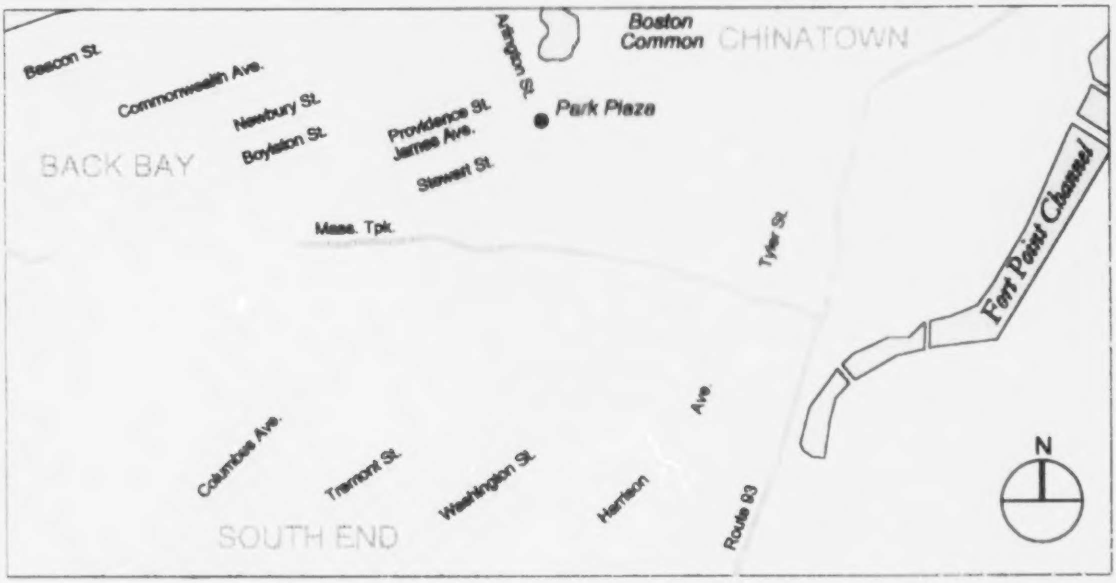

Fig. 5.4: Back Bay, South End, Chinatown

Chinatown is located in an area known as the South Cove. In 1804 the land around Harrison Avenue was laid out parallel to Washington Street (Whitehill 1968: 104). The railroads and the need for a rail terminal south of the city brought enormous changes to the South Cove area. Boats and railroads brought in fill, and between 1833 and 1839 this area was laid out to create the present area of Chinatown. At first it was settled by the Irish and later by a series of immigrant groups including Italian, East European, Lebanese, and Syrian migrants.

The origin of Boston's Chinatown did not coincide with the period of the China Trade in the 1870s and 1880s, but with anti-Chinese violence in the western United States during the 1870s (Sagara 1993: 6). Attempts to escape brought a few Chinese laborers to Boston and they settled in an alley off Oliver Place (near Essex and Oxford Streets) where construction work was available after the Great Fire of 1872 (Yerkes 1998). Anti-Chinese sentiment increased culminating in the Chinese Exclusion Act of 1882 that effectively prevented Chinese men from bringing Chinese wives into the country. As a result a huge imbalance existed between males and females from 1882 to 1965 until the situation changed with the Immigration Reform Act. During those years Chinatown grew slowly from a small group of mostly two hundred men who lived near Beach Street and Harrison Avenue in 1890. At that time about fifteen shops could be found on Harrison Avenue and Oxford Streets. Discrimination restricted Chinese workers to employment in restaurants, laundries, the garment industry, and other low paying jobs. By 1931 the Chinese population had grown

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to nearly 1,200 and as many as 94 businesses would have been found on Tyler and Hudson Streets (Yerkes 1998).

After 1965 and the Immigration Reform Act, the population of Chinatown rapidly increased at the same time that changes in the downtown caused areas of housing to be removed. The "Combat Zone" had developed on Washington Street bringing adult entertainment to the area and an enormous conflict with Chinese cultural values. Changes in transportation steadily chipped away at the boundaries of Chinatown with the Central Artery taking land near Albany Street and the Massachusetts Turnpike removing blocks of housing. Perhaps most destructive to Chinatown was the expansion of Tufts-New England Medical Center that replaced an important residential section of Chinatown during the 1970s (between the Boston Commons and the Massachusetts Turnpike). It effectively cut Chinatown in half and separated it into commercial and residential sections

By 1990 Chinatown had an estimated population of 5,000 people which represented only a small part of the Asian population in the metropolitan area. In 1987 the city conducted a survey of the area and found that Asians came to Chinatown from all parts of the city to eat, shop, work, and visit. At that time there were 190 businesses of which fifty percent were in food services. It also found a severe housing shortage. Only 1,478 housing units were available, most of which were in subsidized developments south of the medical area. In a sense Chinatown spills over into the northern part of the South End. The shortage of housing also has resulted in Asian Americans residing in all the city's neighborhoods and moving out to other southeastern suburbs primarily along the Red Line to Quincy (BRA 1989).

The web site on Chinatown (indicated at the end of the reference list for this chapter) indicates that more than 90 percent of Chinatown's residents are Chinese and more than one-third have arrived in the last five years. It also shows that one-half the businesses are now being run by Vietnamese of Chinese origin. Centered in Chinatown are the agencies, organizations, and cultural institutions that support the Asian-American population of the metropolitan area. City estimates suggest that Chinatown will grow rapidly with as many as 10,000 living in or near the area by the year 2000.

The South End

The narrow isthmus that connected the Shawmut peninsula to the mainland was known as the Neck (*see* Fig. 5.1) and Washington Street was the only road that ran along the ridge. By 1833 the South Cove Company began filling the marshy areas on the South Cove side to make way for South Station (between Route 93 and Fort Point Channel, Fig. 5.2). Gradually a grid pattern of streets began to radiate from Washington Street (Figs. 5.2, 5.4). Many had center parks enclosed with wrought iron fences that broke the monotony of long streets lined with red brick row houses. Bowfront buildings with high front steps created a uniform appearance. Built for the middle class, this area was upstaged by the filling of the Back Bay. Bunting (1967) provides an interesting comparison between the Back Bay and the South End that explains the attraction of the Back Bay's architecture and design.

The South End was the site for the construction of many churches, (including the Cathedral of the Holy Cross) and a network of schools, stores, businesses, and hospitals. It became a favored residential area for only a short period of time before it began to decline in value. In the 1850s the street railroad connected the South End to Scollay Square (east of the State House, Fig. 5.3). That connection was important because other new residential areas were still cut off by marshes and bays. The transition from a middle class residential area to lodging houses was rapid. Financial problems stemmed from the cheaper houses built along Columbus Avenue and parallel to the railway. A financial panic in 1873 led to foreclosures, a precipitous drop in values, and the wealthier residents sold their homes in favor of new housing in the Back Bay. From 1870 to 1885 the South End became a lodging house area and nearly every house from Berkeley Street on the North to Northhampton Street on the South and from the railway parallel to Columbus Avenue to Washington Street on the East side was converted for lodgers. Families moved away leaving bowfront houses that were divided into boarding and rooming houses. With lower rents the area attracted new immigrants, lodgers, and transients.

The social geography of the area is described in Wolfe's book *The Lodging House Problem in Boston* in which he describes the lodgers as a great middle class of "clerks, salesmen, skilled mechanics and miscellaneous industrial workers (1913: 1)." Boarders and lodgers were estimated at 54,000 thousand in 1895, and grew to 70,000 to 80,000 thousand by the year 1910. Groups would gather on the front steps of various homes or in local cafes. Population density increased despite the area having almost no children. The lodgers themselves were characterized by mobility, isolation, heterogeneity, and poverty (Wolfe 1913: 169). Included in this area were many students (estimated at 20-25,000 in Boston) at the same time as a new student quarter emerged in the Fenway area.

In 1968 a group of South End residents demonstrated against urban renewal at a site that became known as Tent City. At first the arguments were against the Boston Redevelopment Authority but later between resident groups and it was not until 1987 that the mixed income division was complete. By the 1970s architects and urban professionals had discovered the South End just 1.5 miles (2.4 km) from downtown and waiting to be restored. Their efforts resulted in the South End being designated a landmark district that protected the original streetscape from change.

Today the South End is still being transformed and renovated as costs of rent and ownership in the Back Bay have skyrocketed and deflected demand for brick bowfront townhouses to the South End. Eighteen percent of the housing units in 1990 were condominiums. Demand is high for housing units at the northern end close to Copley Place, the Prudential Center, and the Back Bay station. Housing renovation continues throughout the entire area as houses are converted to condominiums.

Conclusion

These then were the neighborhoods of Boston's "pedestrian city" of the 1850s (as defined by Warner 1962) and the areas reclaimed during the latter part of the nineteenth century. They were within a two-mile (3.2 km) radius of the downtown. Surrounding the walking city were the peripheral towns. Charlestown (across the Charles River from the North End, Fig. 5.2) had been settled before Boston and became famous for its role in the Revolutionary War (Paul Revere borrowed a horse here for his famous midnight ride and it was also the site of the battle of Bunker Hill.). Charlestown, East Boston, and later South Boston were all originally centered on their waterfronts that were so important to their economic life. Other suburban neighborhoods developed between 1870 and 1900 as the streetcars opened up land that had been annexed for speculative development. They are now the main commuter suburbs served by the transit system and home to many of Boston's new immigrants.

Endnotes

[1] The city employs 615,700 workers of which an estimated 376,000 commute daily. For further details *see* the Insight Report *Boston's Population Doubles Every Day* published by the Boston Redevelopment Authority.

[2] Boston's Freedom Trail, three miles in length, winds through the downtown and along which are places and buildings significant to the City's and U.S. history.

Other pre-revolutionary period landmarks include the Copp's Hill Burying Ground, the Moses Pierce-Hichborn brick townhouse in North Square, the Ebenezer Clough house on Unity Street, and the famous Old North Church from which the lantern was hung as a signal to Paul Revere.

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6

SALEM, MASSACHUSETTS: THE CHANGING GEOGRAPHY OF A COASTAL COMMUNITY IN NEW ENGLAND

Theodore S. Pikora

Nearly four hundred years have passed since the founding of Salem, and during most of this period the sea has continued to retain its importance as a unifying element in the city's image. The geographic patterns of Salem, however, need to be understood in terms of the variety of cultural and economic influences that have transpired through and have taken part in the city's evolution. Today's cityscape reflects at least five historical eras: (1) *early settlement*, (2) the economic prosperity and cultural creativity of *maritime trade*, (3) the years of *manufacturing* and population diversity, (4) the city as a *retail and service center* on the North Shore of Boston, and (5) a more recent focus on *tourism* development.

Early Settlement

The period of early settlement began in 1626 when Roger Conant landed on the northern rim of the old Naumkeag Peninsula of Salem between the North and South Rivers (Fig. 6.1). Two years earlier, he and a small group of followers had attempted to establish a fishing colony in what is now Gloucester on the eastern tip of Cape Ann (Fig. 6.2). That settlement failed because of difficulties

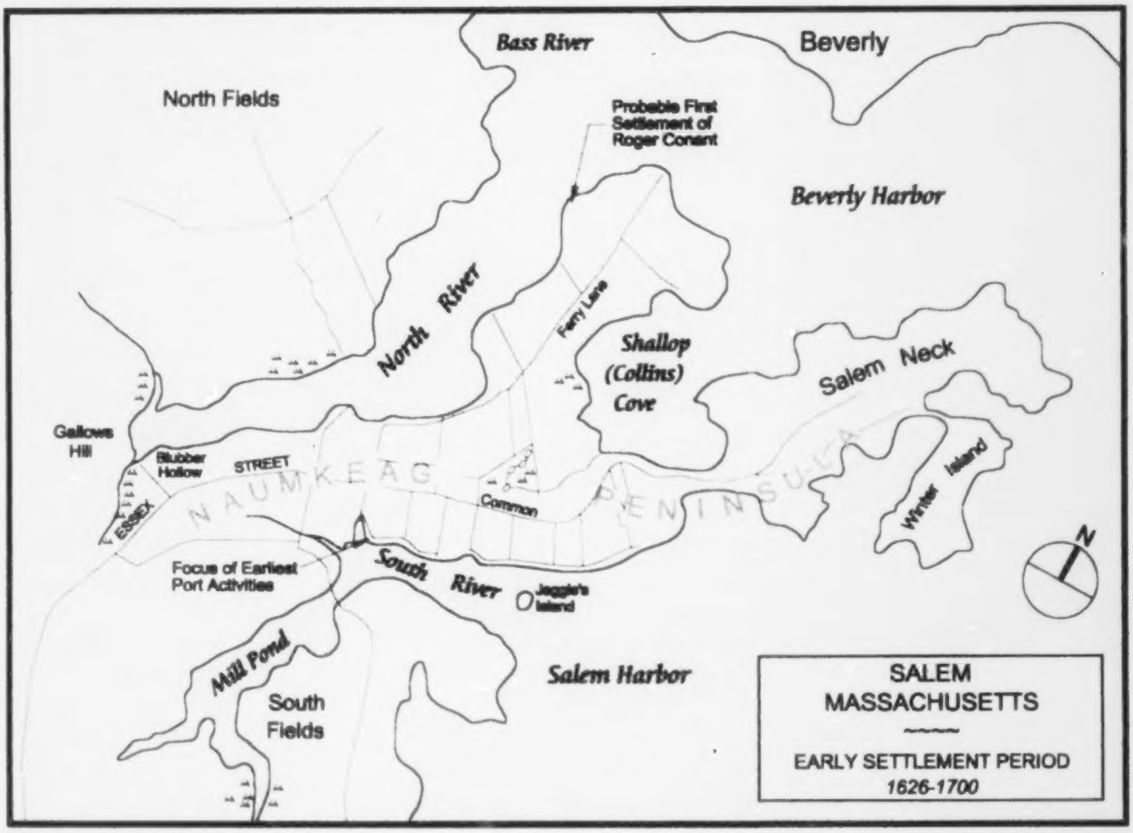
Bass River
Beverly
North Fields
Probable First Settlement of Roger Conant
Beverly Harbor
North River
Ferry Lane
Shallop (Collins) Cove
Salem Neck
Gallows Hill
Blubber Hollow
STREET
ESSEX
NAUMKEAG PENINSULA
Common
Winter Island
N
Focus of Earliest Port Activities
South River
Jaggle's Island
Mill Pond
South Fields
Salem Harbor
SALEM
MASSACHUSETTS
EARLY SETTLEMENT PERIOD
1626-1700

Fig. 6.1: Salem, Massachusetts: Early Settlement Period, 1626-1700

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in growing food for the harsh winter months in an agricultural environment dominated by fields of rocky outcrops. Conant's more modest goal on "Naumkeag" was to survive by farming.

In 1628, Salem received an impetus for rapid growth when John Endecott and later John Winthrop arrived from England under the aegis of the Massachusetts Bay Company, an organization designed to profit from exploiting raw materials in the new colonies. Winthrop soon moved southward along the coast to settle Boston, while Endecott was joined in Salem by a steady stream of immigrants seeking to take advantage of a lucrative basic economy. It was founded on catching and preserving fish for shipment to England, a successful network of trails to secure furs from Native American lands in central New England, and access to lumber and tall trees, to be used for masts on ships.

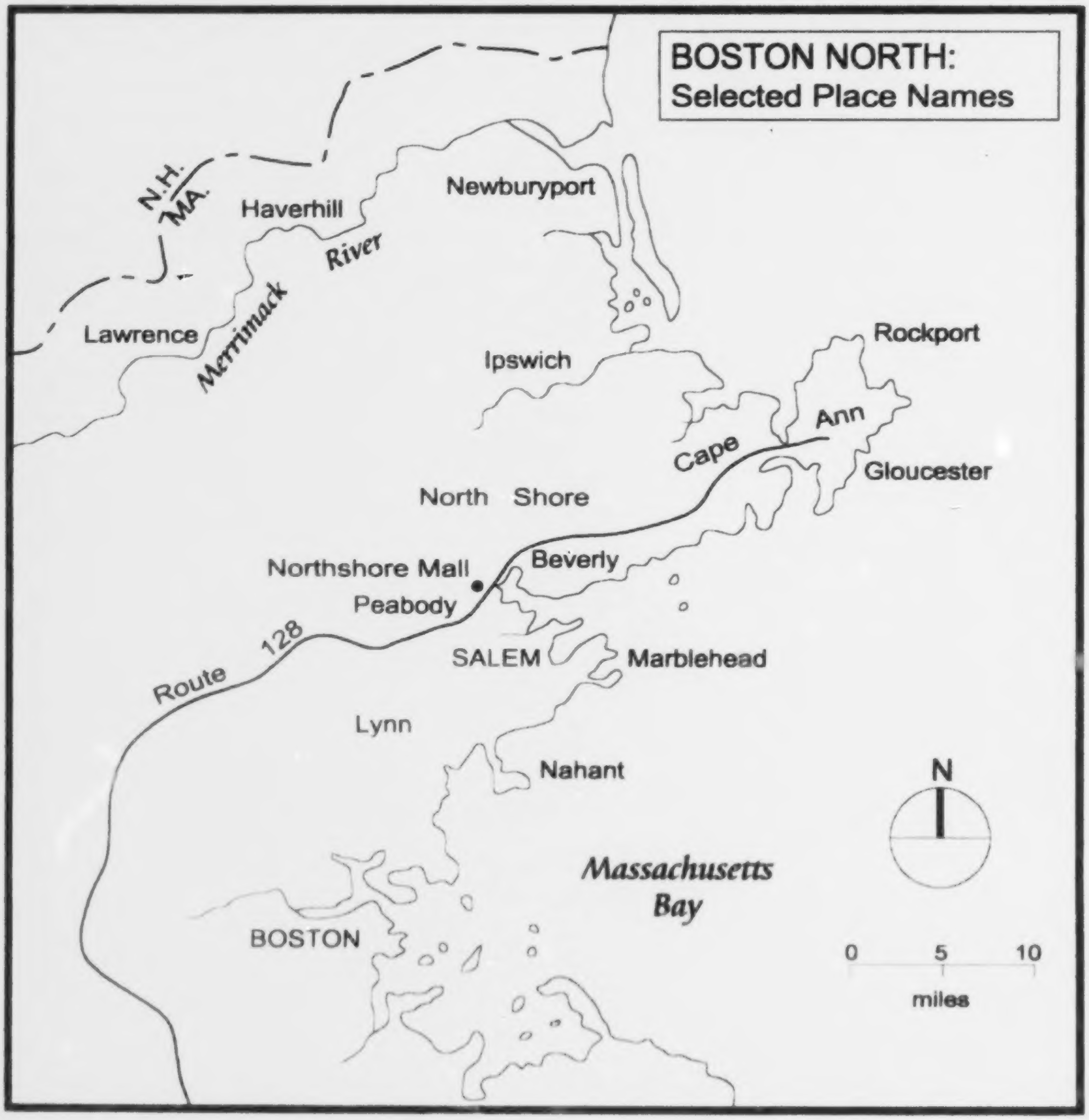
BOSTON NORTH:
Selected Place Names
N.H.
MA.
Haverhill
Newburyport
Merrimack River
Lawrence
Ipswich
Rockport
Cape Ann
Gloucester
North Shore
Northshore Mall
Beverly
Peabody
Route 128
SALEM
Marblehead
Lynn
Nahant
N
Massachusetts Bay
BOSTON
0
5
10
miles

Fig. 6.2: Boston North: Selected Place Names

Meanwhile, Roger Conant along with several other *planter* families supplied food crops from nearby farmsteads along waterways to the north and west of the now bustling settlement. The name of Salem is said to have been derived from *shalom* to signify the peaceful relationship between the farmers and the business and trades people who made up this new community.

Most of the activity in the settlement during the 1600s was directed at shipping goods across the sea to fulfill the profit objectives of the Massachusetts Bay Company. The South River was the focus of this economy, and ships docked along the shoreline from the inner harbor eastward (Fig. 6.1). Winter Island, at the eastern point of the Naumkeag Peninsula, was the center of the fishing industry. It provided protection from dogs, cats, and poachers; and it also remained ice free throughout the winter months. On the North River, the odors of animal processing dominated an area called Blubber Hollow (Fig. 6.1). Farther downstream was the irritating and incessant noise from the crafting of dugout canoes, a popular mode of local transport along the nearby waterways.

Salem's land use pattern was not unlike the model of other coastal communities during this period. An early version of Essex Street bisected the peninsula from east to west, and it divided a dense network of property lines oriented north and south toward Beverly and Salem harbors, respectively (Fig. 6.2). Public ways then grew along the property lines to connect the harbors with Essex Street. An area just north of Essex Street and west of Shallop (Collins) Cove was not used at first because of poor drainage, but as open land became more scarce with an increased density in housing, it became the central *town common.* Land beyond the rivers in north and south Salem also was designated as common, and it was farmed cooperatively by families who lived in the town center. Shadows of this layout and a scattering of seventeenth-century dwellings are still with us today.

By the middle of the seventeenth century, at least a half dozen compact settlements were established in the surrounding region as an extension of Salem's success. The network of spatial linkages was tightly woven with many of the new villages providing food supplies for Salem as well as outlets for a growing population density. It also encouraged a thriving conservative Puritan social order in which Salem acted as the religious and legal center. This was the setting for Hawthorne's *The Scarlet Letter* and the infamous "Witch Trials" of 1692, an event that has left a permanent mark. Today, references to witches are found throughout the city. In addition to the trials, other interpretations of the witch theme can also be found; often at opposite ends of the spectrum, and sometimes providing a source of controversy. They include the image of a witch on a broomstick as a city emblem, the scary witches and ghouls of an annual "Haunted Happenings" festival in October prior to Halloween, and also a community of people who today practice Wiccan religious beliefs.

Maritime Trade

The maritime trade of the eighteenth and early nineteenth centuries spawned the glory days of Salem, and this period provides the most significant imprint on the landscape. Trade with Britain, the West Indies, and the Mediterranean were important before the Revolutionary War, but it was the post-war Far East and East Indies trade that brought riches, fame, and growth to the city. To accommodate the increase in vessel size, traffic and cargoes, many new wharves and warehouses were built from the South River eastward along the shoreline of Derby Street (Fig. 6.3).

By 1790, Salem was the sixth largest city in the United States, and in 1800 it was paying more than 5 percent of the nation's taxes. The city became a place of national stature, and distinguished Salemites played significant roles in commerce, politics, and early manufacturing endeavors. They included Elias Hasket Derby, America's first millionaire; William Gray became the nation's leading ship owner with more than 180 vessels based on trade between ports from Russia to Calcutta; and the sons of George Crowninshield who served in Congress, as Secretary to the Navy and as mill owners. Between 1760 and 1820, wealthy and politically powerful merchants built fine homes in classical Georgian and Federal styles. The neighborhoods around Washington Square and Federal Street are now showcases for these landmarks, and Chestnut Street is considered to be one of the finest architectural cityscapes in the United States (Fig. 6.5).

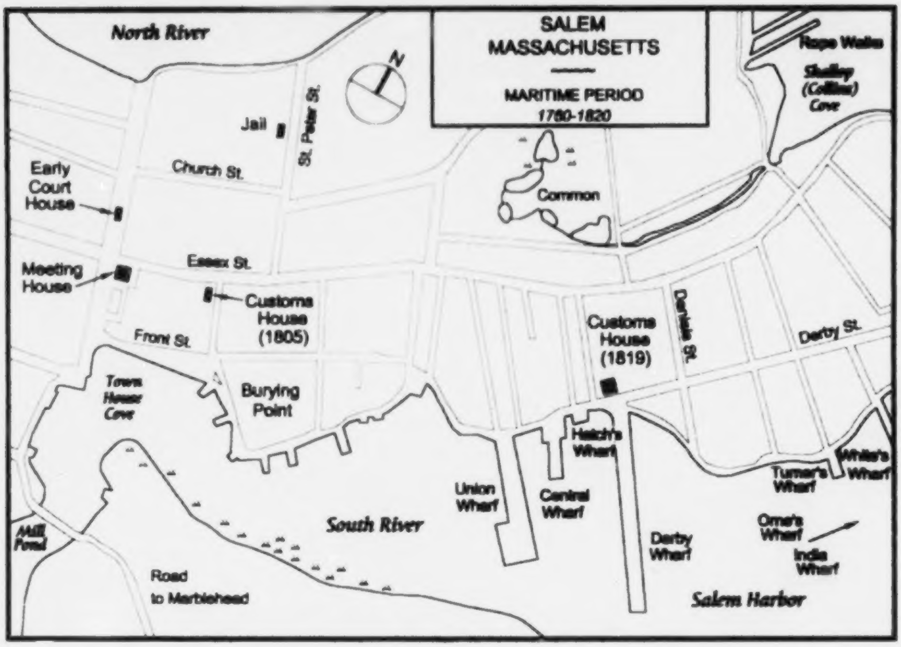
North River
SALEM
MASSACHUSETTS
MARITIME PERIOD
1760-1820
N
Rope Walks
Shallop
(Collins)
Cove
Jail
St. Peter St.
Early
Court
House
Church St.
Common
Essex St.
Meeting
House
Customs
House
(1805)
Front St.
Customs
House
(1819)
Derby St.
Town
House
Cove
Burying
Point
Hatch's
Wharf
White's
Wharf
Turner's
Wharf
Union
Wharf
Central
Wharf
South River
Orne's
Wharf
India
Wharf
Derby
Wharf
Mill
Pond
Road
to Marblehead
Salem Harbor

Fig. 6.3: Salem, Massachusetts: Maritime Period 1760-1820

This period also set the foundation for Salem as a nineteenth-century center of cultural activity and intellectual curiosity. Writers like Nathaniel Hawthorne, with his novels, such as *The House of the Seven Gables*, contributed to the city's significance in the literary fabric of the nation. Samuel McIntire, artisan and architect, created masterpieces that easily rivaled those of Bullfinch who worked in the better known city of Boston. Edward Holyoke practiced medicine and collected the most extensive weather records of his time. Nathaniel Bowditch was a linguist, mathematician, surveyor, and navigator who created precise nautical charts of Salem Harbor and beyond. His text, *The New American Practical Navigator*, continued to be published by the U.S. Navy for well over a hundred years.

The city contains a number of institutions, monuments and buildings that testify to the greatness of the maritime era including the Customs House where Nathaniel Hawthorne worked as the port surveyor (Fig. 6.3). The likes of George Washington, Marquis de Lafayette, James Madison, and Alexander Hamilton visited the intellectual and social gathering places of Hamilton Hall, Derby Hall, and Assembly Hall. The Lyceum is famous for its lectures by Ralph Waldo Emerson, Henry David Thoreau, Daniel Webster, and Horace Mann, among others. In 1799, a maritime society was established exclusively for members who had navigated beyond the Cape of Good Hope or Cape Horn. It evolved into the Peabody Museum, a depository for fine collections that represent the Far East and other places traveled by Salem's seafarers. Today, the Peabody Essex Museum, renamed after a recent merger with the Essex Institute nearby, has claim to an international reputation (Fig. 6.5).

The tide began to change, however, when President Thomas Jefferson declared a trade embargo on American goods headed for British ports in 1807. It nearly stopped all sailings from Salem, and it signaled the beginning of the decline of the Maritime Era. After the War of 1812, Salem began to realize that its harbor was too small to compete with other ports that could better accommodate the increasing size of ships. By 1840, the city's trade volume had fallen dramatically and its population had dropped to the rank of twenty-first in the nation. For the first time in 200 years, Salem

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was losing its strong functional ties to the sea.

Manufacturing

Processing leather and manufacturing textiles and shoes began to replace maritime activities as the economic base of Salem and the surrounding area in the early 1800s. Land for mills and warehouses was found along the harbor and especially by filling in the banks of the North and South Rivers. The Naumkeag Steam Cotton Mill was built on Salem's waterfront in 1839, a year after the railroad arrived (Fig. 6.4). A new maritime connection was struck as coal arrived by ship to provide the power for the Naumkeag as well as for inland mills. Leather processing began to grow as early as 1805 on the North River from Salem toward the west, and it was eventually responsible, in part, for the fracturing of the new industrial city of Peabody from former agricultural areas that surrounded this densely populated center of mill workers. By the middle of the century, a one-mile stretch along Blubber Hollow produced more than 50 percent of the nation's leather. Early shoe production was found in a number of coastal communities including Salem where seafaring families provided an off-season labor force at home or in back yard sheds. As the industry became more mechanized, the Massachusetts cities of Haverhill in the north and Lynn to the south dominated shoe production.

New waves of immigrants came with the manufacturing jobs, creating a sharp break with the purity of Yankee English stock and signaling the beginning of ethnic diversity for Salem. The first mill workers came from the inland towns of New England, the Maritime Provinces of Canada, England, and Scotland. By mid-century, large numbers of Irish began to arrive followed by French Canadians, Poles, and Italians in the late nineteenth and early twentieth centuries (Fig. 6.4). They lived in new neighborhoods built in North and South Salem and in areas of the older *pedestrian* city around Derby and Congress Streets, often in the infill housing of *three deckers*[1] and brick apartment buildings. New churches and synagogues along with a number of ethnic clubs and immi-

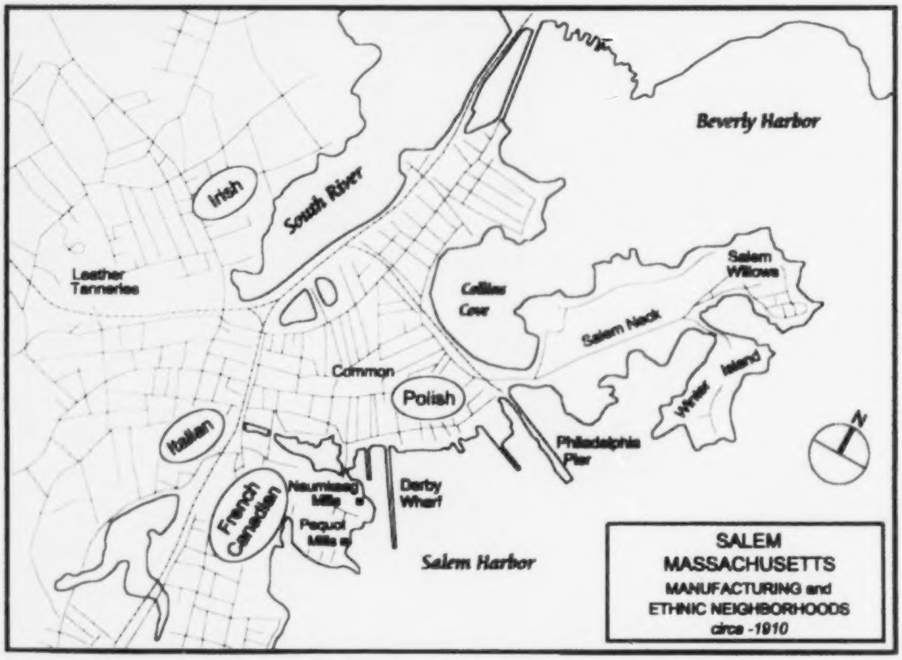
Beverly Harbor
Irish
South River
Leather Tanneries
Collins Cove
Salem Willows
Salem Neck
Common
Polish
Winter Island
Italian
French Canadian
Naumkeag Mills
Pequot Mills
Derby Wharf
Philadelphia Pier
Salem Harbor
N
SALEM
MASSACHUSETTS
MANUFACTURING and
ETHNIC NEIGHBORHOODS
circa -1910

Fig. 6.4: Manufacturing and Ethnic Neighborhoods circa 1910

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grant assistance societies provided new social orders. The mill era also produced new wealth, and several middle to upper class neighborhoods were constructed off Salem Common and along Lafayette Street employing Victorian architectural styles (Fig. 6.4).

The prosperity and population growth related to manufacturing stalled and eventually began to decline in the first half of the twentieth century. Salem's Great Conflagration of 1914, which started in Blubber Hollow, destroyed much of the central and western parts of the city. This, along with the Great Depression of the 1930s, the loss of leather jobs after World War II, and the closing of most of the textile mills by the mid 1950s (for more favorable sites in the South) ended the city's function as a center of manufacturing.

Central Business Activities

Salem was a center for commerce in Essex County since its establishment. Its emergence as a primary center in the hierârchy on the North Shore of Boston, however, was fueled by the early construction of a railroad line and the retail and service needs of a growing population in manufacturing. By 1910, an intricate pattern of streetcar lines made Salem a focal point for surrounding communities; and a central business district (CBD) stretched along Essex Street from North Street in the west to Hawthorne Boulevard in the east. It had a nearly continuous row of ground-floor storefronts with offices in second and third stories. This intensity of use reached its peak in the early 1950s with department stores, a variety of high-order specialty shops, as well as entertainment, medical, and financial facilities. On Friday nights, Salem became the social center and shopping place for people of all generations from towns around the North Shore. The importance of CBD functions added to the traditional cultural position of the city as a discrete center on the North Shore while other cities to the west and south of Boston were being absorbed into a greater Boston metropolitan area. This regional separation continues to be a source of distinction for some Salemites even today.

The economy of central business functions then followed the way of manufacturing and seafaring before it. From 1954 to 1958, the train station in the heart of the downtown was torn down and a railroad tunnel was constructed creating confusion and congestion for auto traffic. In 1958, the Northshore Mall opened at the junction of Routes 114 and 128, the circumferential highway around Boston and its satellite cities of eastern Massachusetts including Salem. The easy access to the planned shopping center and its increased range of high-order goods dealt a severe blow to Salem's CBD. By 1968, retail stores lost more than half of the space they occupied before the rail tunnel; by 1987, only the city block at the southeast corner of the Washington Street-Essex Street intersection could be classified in a Central Shopping District capacity (Fig. 6.5).

In an effort to revive the downtown, the city began a creative plan involving historic restoration, pedestrian malls, and a vehicular infrastructure that was implemented in the early 1970s. The idea was to develop an attractive functional setting combining the city's ambiance, history, museums, and restaurants in order to rekindle interests from retailers, service businesses and their markets. Although the efforts received national attention and a number of design awards, it did not work. By the mid-1990s, the downtown had few specialty shops and a high degree of unoccupied space, even at the modern East India Mall with its parking garage built in 1976. Shoppers and businesses continued to be attracted more by the alternatives along the Route 128 Belt west of the city.

Tourism

Tourism and related recreational activities have enjoyed a long history in Salem and on the North Shore of Boston. To some degree, they reflect a rekindled link with the sea. Shortly, after 1800, breezes in Nahant from Massachusetts Bay cooled vacationers from Boston, and a seaside hotel was built in 1823 (Fig. 6.2). Summer colonies and coastal mansions, or *cottages* for the wealthy, began to appear from Beverly to Gloucester after the opening of the railroad to Cape Ann in 1846. Marblehead was already an important yachting center after the Civil War. Salem's nineteenth century attraction was Salem Willows, an amusement park at the water's edge on the eastern end of

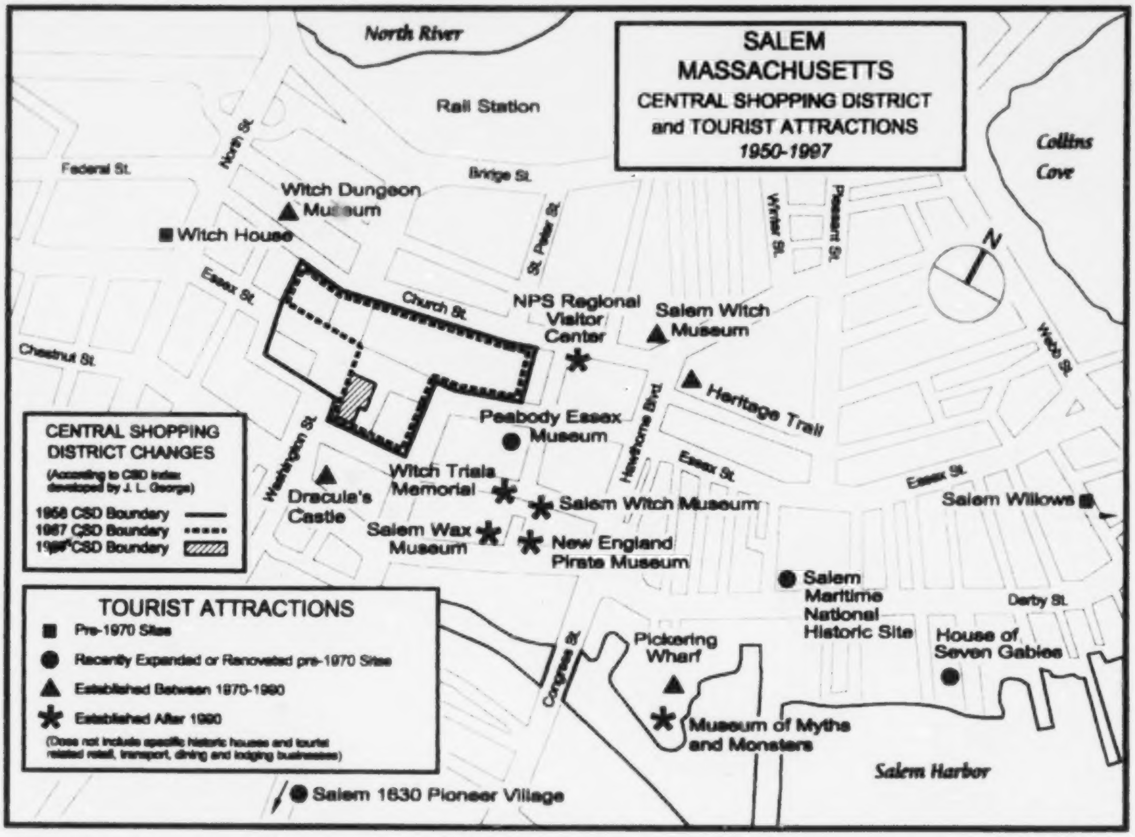
North River
SALEM
MASSACHUSETTS
CENTRAL SHOPPING DISTRICT
and TOURIST ATTRACTIONS
1950-1997
Rail Station
Collins Cove
Federal St.
North St.
Bridge St.
St. Peter St.
Winter St.
Pleasant St.
N
Witch Dungeon Museum
Witch House
Essex St.
Church St.
NPS Regional Visitor Center
Salem Witch Museum
Chestnut St.
Webb St.
Heritage Trail
Peabody Essex Museum
Hawthorne Blvd
Washington St.
Essex St.
Essex St.
Dracula's Castle
Witch Trials Memorial
Salem Witch Museum
Salem Willows
Salem Wax Museum
New England Pirate Museum
Salem Maritime National Historic Site
Derby St.
Congress St.
Pickering Wharf
House of Seven Gables
Museum of Myths and Monsters
Salem Harbor
Salem 1630 Pioneer Village
CENTRAL SHOPPING DISTRICT CHANGES
(According to CSD index developed by J. L. George)
1958 CSD Boundary
1987 CSD Boundary
1997 CSD Boundary
TOURIST ATTRACTIONS
Pre-1970 Sites
Recently Expanded or Renovated pre-1970 Sites
Established Between 1970-1990
Established After 1990
(Does not include specific historic houses and tourist related retail, transport, dining and lodging businesses)

Fig. 6.5: Salem, Massachusetts: Central Shopping District and Tourist Attractions, 1950-1997

Salem Neck. Here family-owned restaurants, rides, and arcades drew patrons from Salem and surrounding communities each summer. Unlike most other amusement parks in New England today, the "Willows" is still in business and operating successfully.

Until 35 years ago, the only other significant tourist attraction in Salem was The House of the Seven Gables, this, despite the city's rich history and its Customs House, the Peabody Museum, and the Essex Institute (Fig. 6.5). In the 1970s with the opening of the Salem Witch Museum and the construction of tourist-oriented businesses at the Pickering Wharf complex (Fig. 6.5), the image of tourism in the city to some observers began to change from that of an "unnecessary inconvenience" to a possible new direction for a viable economic base. In the late 1980s, a number of public agencies and private businesses established the Salem Partnership and it identified tourism development as a leading economic goal for the community. The Partnership, along with the National Park Service, was successful in launching a regional tourism plan incorporating all of Essex County, and in obtaining funds to construct a regional visitor center in Salem at the site of an abandoned armory (Fig. 6.5).

In a sense, it is an effort to capitalize on the area's rich history to create a new era of development, catering to a more affluent and educated tourist market segment of the population. New attractions have opened in recent years, and the historic maritime site of the National Park Service and The House of the Seven Gables have undertaken extensive renovations and expansions at their sites. The city also has committed its resources to the development of a necessary infrastructure. Now discussions are taking place about the possibilities of bringing a major hotel and conference

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center to the former Parker Brothers industrial site near the railroad station along the North River. The city is now generating ideas for new uses of the old Salem Jail, promoting outlet store space to enhance the city's retail mix, and constructing a new pier to accommodate cruise ships. A successful seasonal ferry service to Boston began last year for commuters and recreational travelers alike. The Peabody Essex Museum announced a significant project two years ago. It involves 100 million dollars worth of development at the eastern end of the Essex Street Mall, and it should provide a boost not only to the city's tourism industry but also to the retail and service business climate.

Conculsion

Salem's popular images are usually associated with the witch trials and its maritime history. The city's evolution has, in fact, experienced a number of cultures and economies that have transpired over time throughout New England, one replacing the other as was the case when manufacturing followed maritime trade. The current era of Salem's development represents a summation and wise use of cultural overlays that have shaped its history. Using tourism to promote economic renewal in New England today has become a common theme in many coastal communities, but the richness of Salem's historical resources provides a unique and competitive opportunity for success.

End note

[1] A fairly common frame house type in urban New England that appeared toward the end of the nineteenth century. Three deckers were detached or semi-detached apartment buildings resembling a large three-story house with each apartment occupying an entire level.

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Note: Maps in this chapter were created by the author and drawn by Daniel Boudreau. They are based on field observations and a collection of sources including H. Baldwin, W. K. Freeman, H. McIntire, H. Meek, H. Noyes, S. Perley, J. D. Phillips and C. Putnam.

7

THE HERITAGE OF THE TEXTILE INDUSTRY IN THE SOCIAL FABRIC OF LOWELL, MASSACHUSETTS

Stephen Matchak

Lowell is America's quintessential textile city. This first planned industrial city in America became a model for many other New England cities, but suffered a prolonged decline. To survive it has radically altered its economic base in recent decades. Lowell also reflects America's labor, ethnic, and cultural history. In short, Lowell is an example of America's industrial development as well as its history, culture, and geography.

Lowell's Origins

The seeds of Lowell's origin began with Francis Lowell, the wealthy son of a Boston merchant. During the War of 1812, Lowell found himself and his family detained in Britain for the war's duration. A man with a keen mind and near photographic memory, Lowell toured several British textile mills committing their essential details to memory. On his return to Boston, he hired a few mechanics and proceeded to replicate and improve upon the power looms that he had studied in England. In 1814, Lowell and his colleagues formed the Boston Associates and inaugurated what became known as the Waltham Experiment. America's first power textile mill stood along the Charles River, just a few miles upstream from Boston in the town of Waltham. The factory was an instant economic success and it was a regional technological wonder. For the first time power looms wove cloth,

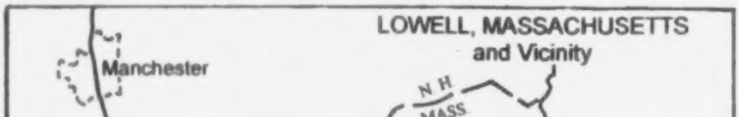
LOWELL, MASSACHUSETTS
and Vicinity
Manchester
N.H.
MASS.
Newburyport
Merrimack River
Nashua
Merrimack River
Lawrence
Lowell
Cape Ann
Concord River
Middlesex Canal
Salem
Concord
N
Waltham
Charles River
Massachusetts Bay
BOSTON
0
5
10
20
miles

Fig. 7.1: Lowell, Massachusetts and Vicinity

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thereby relieving many, mostly women, of the tedious and onerous processes involved with handcraft production. Although a technological and economic success, the experiment failed to endure. The problem was the Charles River—a slow tidal river without much driving force. The Charles could not sustain the requirements of hydrologically driven factories (Fig. 7.1).

To remedy the problem, Lowell's associates searched for a more conducive site. In East Chelmsford, they found an ideal location. The Merrimack River falls some 30 feet in less than a mile. From time immemorial the site had been a Native American meeting ground where families and tribes gathered to fish every spring. Salmon, alewive, herring, and sturgeon crowded the river. Trails intersected at the falls making it accessible from the river and inland locations. Colonial settlement had displaced many of the Native Americans, although John Eliot had made the site a location of one of his praying villages designed to convert them to Christianity. The savagery of King Phillip's War in 1675 doomed the Native-American settlement whose remaining survivors fled into northern New England and Canada. Then all the area became provincial farmland.

Developing Ties to Other Regions

The economic pace quickened, however, at the close of the eighteenth century. Investors built two canals linking the New Hampshire hinterland to the New England coast. The first, the Pawtucket Canal, circumvented the falls. It started just upstream of the Pawtucket Falls and ran to

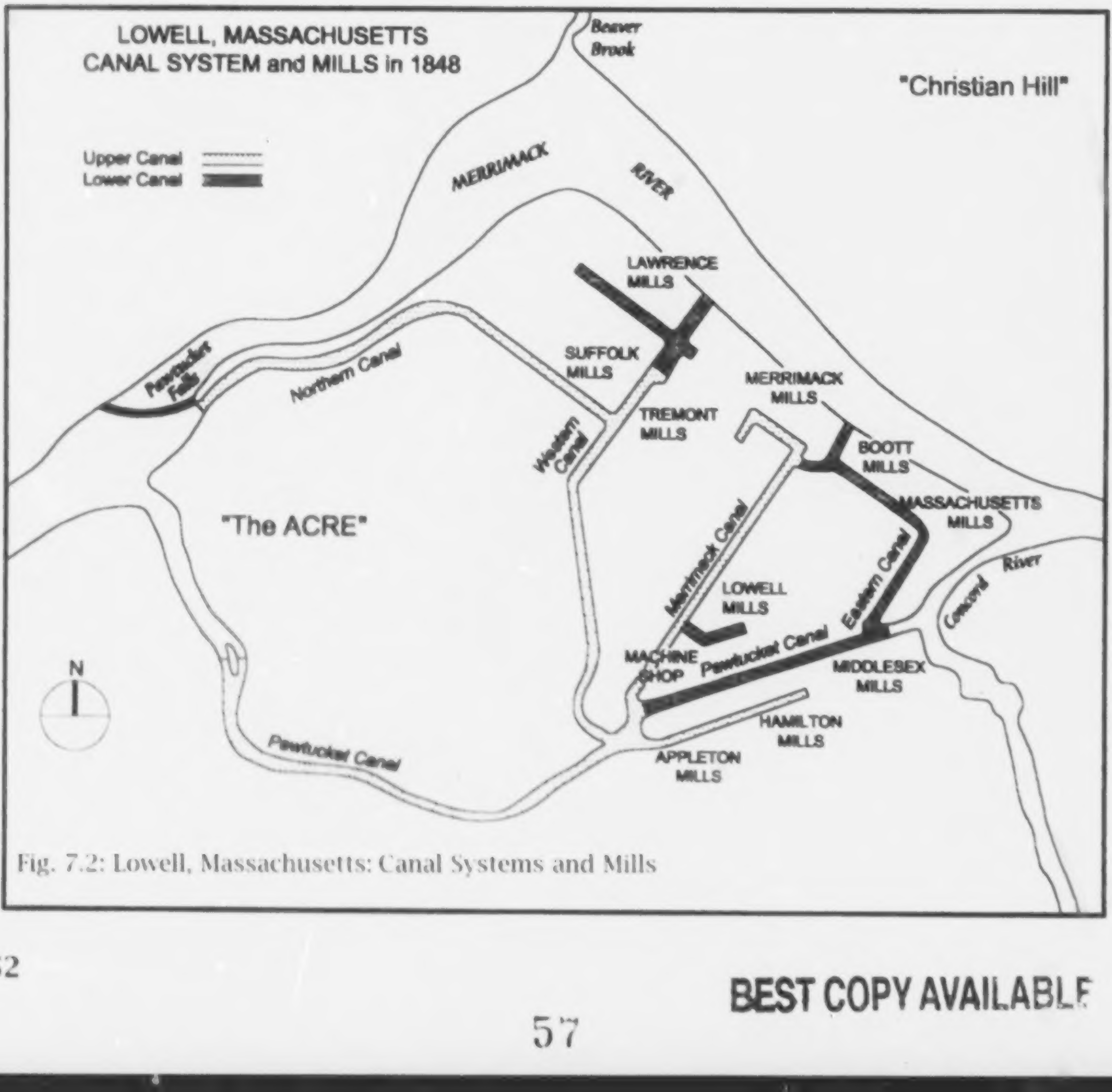
LOWELL, MASSACHUSETTS
CANAL SYSTEM and MILLS in 1848
Beaver Brook
"Christian Hill"
Upper Canal
Lower Canal
MERRIMACK
RIVER
LAWRENCE MILLS
SUFFOLK MILLS
Pawtucket Falls
Northern Canal
MERRIMACK MILLS
TREMONT MILLS
Western Canal
BOOTT MILLS
MASSACHUSETTS MILLS
"The ACRE"
Merrimack Canal
Eastern Canal
Concord River
LOWELL MILLS
MACHINE SHOP
Pawtucket Canal
MIDDLESEX MILLS
N
HAMILTON MILLS
APPLETON MILLS
Pawtucket Canal

Fig. 7.2: Lowell, Massachusetts: Canal Systems and Mills

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the Concord River, which joins the Merrimack just downstream from the falls (Figs. 7.1, 7.2). Investors from Newburyport were the primary underwriters of this effort to ease the passage of goods from New Hampshire and, obviously, to promote the economic development of Newburyport (Fig. 7.1). Jealous and bent on regional hegemony, Boston merchants and capitalists sought to preclude New Hampshire farmers from trade with Newburyport. To compete, they funded the building of the Middlesex Canal, which ran some twenty-six miles from Boston to East Chelmsford (south, southwest of Lowell, later to become Lowell). Interior farms, then, had two choices for their produce.

Another result of the canals was to make the site even more valuable to the industrialists who would transform the sleepy village into an industrial marvel. East Chelmsford contained a remarkable source of hydropower that had already been controlled to some extent by the Pawtucket Canal. The village's situation was also ideal. A scant twenty-six miles separated it from the principal investors in Boston. A canal provided transportation for about eight months of the year. Connections from Boston were, of course, worldwide and facilitated both the flow of cotton to Lowell and the distribution of cloth from it. Needless to say, the investors surreptitiously acquired acres of farmland without revealing their intent. The land was renamed Lowell after Francis Lowell, the original inspiration and driving force behind the project, who had died in 1817 (Fig. 7.2).

As the story goes, Kirk Boott, the agent for the Boston Associates, met a band of Irish *navvies* (originally the name for construction workers on a canal) on the Merrimack's banks in 1822. After offering them a beer to seal a laborer's agreement, the Irishmen set about building Lowell. A few years later, in 1824, the first bolt of cloth was shipped from Lowell to Boston thereby transforming textile production and New England forever. Soon, other companies stood on the Merrimack's banks making Lowell grow rapidly into a industrial city.

From a contemporary perspective, it is difficult to appreciate all the changes that Lowell symbolized and ignited. Certainly other industries caused similar transformations in other regions, but for New England, Lowell proved to be especially significant economically, socially, and geographically. Economically, the old families of merchant princes became industrialists who wisely invested their funds in solid and safe factories instead of in the higher risk business of international trading. New England turned its back to the sea that had provided sustenance and commerce for virtually two hundred years. Farmers, especially farm girls, formed the backbone of an industrial working class. They replaced the rhythms of field and farm with the bells and whistles of clocks and machines. Hard cash transactions replaced a rural economy based upon barter of staples for luxuries. An economic dependency emerged with failing farm families increasingly dependent upon the wages of their children in the cities.

A Changing Economy—A Transforming Geography

This changing economy also transformed New England's geography both regionally and site specifically. Regionally, industrial power spread inland. Many sites that shared Lowell's characteristics quickly became manufacturing centers. Lawrence, Manchester, Nashua, and Concord, all along the Merrimack River, grew into a string of textile-based cities (Fig. 7.1). Chicopee and Holyoke in Western Massachusetts also began as textile cities. Each of these cities drew upon their hinterlands for labor and produce. The money that these cities generated flowed to Boston enriching it as the region's primate city. A political and economic hierarchy emerged with Boston as the apex of the pyramid. Industrial cities underneath Boston in the hierarchy vied for autonomy and power often chafing at their political and financial collars. At the bottom, lay many small villages whose children left their families to work in the cities and returned very little to the local hometown economy. In subsequent decades these towns would try to industrialize around small factories that offered some alternative to the region's declining agricultural fortunes.

The geography of many of these textile cities is also remarkably similar to Lowell's. The river, of course, defines the heart of the city. Mill races upstream draw off enough water to fill the canals and to provide power for spinning waterwheels and turbines. Near if not adjacent to the mills stood boarding houses to accommodate young women who were known as *operatives*. The shopping district stood near the boarding houses but in a nonindustrially appropriate location. A disadvantaged but nearby location served the poor navvies. In Lowell, a swampy area that became known as "the Acre" was home to the Irish navvies who made a squatter's settlement from industrial refuse (Fig. 7.2). Radiating away from this industrial core stood homes of the increasingly wealthy. At the city's fringe, the wealthiest resided in small estates of several acres complete with stables, gardens, and orchards. Since Lowell, as is the case with many other cities, lies in a fairly small valley, the industrial sections grew on relatively flat if not swampy land. The wealthy preferred to live on the slopes of the hills that afforded them a better view of their city as well as cleaner air. The house on the hill became a literal goal as well as a figurative expression of success. In Lowell, neighborhoods such as the Highlands, Bellivedere, and Christian Hill fit into this geographic pattern. The geographic relationships found in Lowell are typical of many New England mill cities.

The Labor Supply and Social Change

Returning to the topic of labor, Lowell is justly noted for its introduction of the boarding house system. The building of Lowell presented its owners with a unique problem. By building the factories well into the country, they necessarily distanced the workplace from the workers. Obviously, the most readily available workforce would have been found in the coastal cities. The owners, however, were unwilling to invite these urban coastal folk to Lowell. Instead, they recruited young women from the agricultural hinterland who earned a dollar a week for about seventy hours of exceptionally demanding labor. The work was unrelenting and the breaks few. A loom operator typically managed two looms, but it was not uncommon for a girl to work three looms simultaneously. All the loom's workings and the leather belts that transferred the river's power to the machines lay exposed. Injuries caused by momentary inattention or happenstance were common. Women worked with no ventilation. The factory's windows remained closed to increase the humidity, to make the threads more pliable, and to reduce the wind that could cause flaws in the weaving. Clattering looms created a din, which precluded speaking or hearing anything other than the machines. There must have been a significant number of workers with respiratory diseases, long-term hearing loss, and the scars of industrial accidents.

The mill girls lived in boarding houses, whose owners supervised virtually every off-the-job moment. Women typically had between four to six roommates and no privacy. Moral police supervised their conduct. Evening activities included poetry readings, lectures by intellectual authorities, and the production of literary magazines such as the *Lowell Offering*. This publication by the mill girls offered them an outlet for expressing their thoughts and developing their intellectual interests. In fact, one mill girl, Lucy Larcom, became a regionally noted poet and author later in her life. Not surprisingly, her early poems are escapist and must have reflected long hours of daydreaming while attending her assigned tasks. Yet, Lowell pleased noted authors like Charles Dickens. By and large, they found the mill girls healthy looking and attractively dressed. Dickens described them as intellectually active, pleasant, and well dressed. To him, they seemed a cut above the caliber found in English cities.

These conditions say something about rural life and the social systems that would make Lowell attractive. At the time Lowell blossomed, rural areas started to decline. New England's marginal farmland failed to compete with the Midwest, especially after the Erie Canal opened. Farmers abandoned their land, sons and brothers headed west, and women had few economic opportunities. Careers in teaching and nursing still, by and large, lay in the future, spending one's life milking cows obviously remained unappealing, and marriage was difficult without a suitable dowry. For many women, Lowell provided one of the few socially acceptable economic opportunities in New England off the farm and free of parental constraints.

To their credit, the mill girls did not suffer in silence. They began to organize and to protest for shorter hours, better conditions, and more pay. By 1845, a court case made its way to the

Massachusetts Superior Court on these issues. Predictably, the court ruled that the women had made a negotiated contract with their employers. With full knowledge of their work conditions, mill girls had the choice of accepting jobs or leaving. Those decisions conveniently ignored the economic realities of a working-class life in favor of political and financial power. Growing labor unrest and injustices, however, were overshadowed by three unrelated factors that shaped Lowell, New England, and the Nation.

Public Acceptance of Technology

The first was the public acceptance of technology. Davy Crockett, as a member of the U. S. House of Representatives, toured Lowell and marveled at it. With little exaggeration, he saw that raw cotton stored in the mill's attic emerged as a new suit of clothes at the front door. Similarly, the railroad brought more goods to more people than ever before. This changed patterns of consumption, information, personal travel, and worldview. Americans began to feel connected to each other and part of a growing and dynamic society. Industrialism fostered new patterns of specialized labor and reduced self-sufficiency. Daniel Webster once spoke in a small New England town to mark the official welcoming of the local railway. He recalled that as a farm boy salt-water fish was unknown, news was always stale, and few ever traveled. With the new technology, rural areas linked themselves to the nation. New products poured into rural areas freeing villagers, especially women, of work that was traditionally associated with the home. Certainly, spinning and weaving were two of these.

Industrialization and Immigration

America's growing economy and promise of prosperity attracted the Irish, driven from their country by political oppression and famine. Their migration to America generally, and to Lowell specifically, is the second major factor. The Irish replaced the Yankee mill girls who found better things to do than work in the mills. New occupations such as teaching and nursing began to provide better opportunities, and a booming economy provided a leg up on the socio-economic ladder. Destitute Irish workers willingly replaced the Yankee mill girls. The boarding houses closed. Tenement areas expanded, and slums resulted. Lowell's geography changed to accommodate this process. The mills had expanded to form a wall of factories along the river. Near them stood substandard housing for the working class. Near railway stations stood boarding houses and other public accommodations for recent immigrants. Beyond, as before, lay the better neighborhoods circling the city center.

Changing National Politics

Abolition, Know Nothing prejudice, and the Civil War comprise a third factor of vehement politics that had a profound effect on the city. Know Nothing politics derived from a nativist reaction to significant Irish migration. Yankees castigated the Irish for their religion, culture, and poverty. Lowell was the scene of several pitched battles between angry Yankee mobs and rock-throwing Irishmen. The general public was far more likely to turn a blind eye toward labor injustices that were directed toward a discriminated minority group. At the same time the public revulsion over slavery flamed and grew into the firestorm that ignited the Civil War. Public opinion focused on national concerns relegating Lowell's position to a secondary status. Not surprisingly, the mill owners were sympathetic towards slavery or sympathetic to maintaining a steady flow of cheap cotton. At the onset of the war, they became so distraught that many closed their mills because of the disruptions in the flow of raw materials. Unemployment encouraged many workers to join the army and others to leave.

After the war, the mill owners found themselves in a familiar situation. A mill city existed without laborers. This time the solution was to invite French Canadians to Lowell. An agricultural depression gripped Quebec at the time, and thousands were prepared to walk from Canada to cities across New England. In Lowell, French Canadians came to work in the mills, and they started their own ethnic neighborhood, Little Canada, across a major thoroughfare from the Irish neighborhood, the Acre. Lowell eventually became a truly multicultural city with the arrival of the French Canadians, the residual Irish population, and, of course, the Yankees (Fig. 7.3).

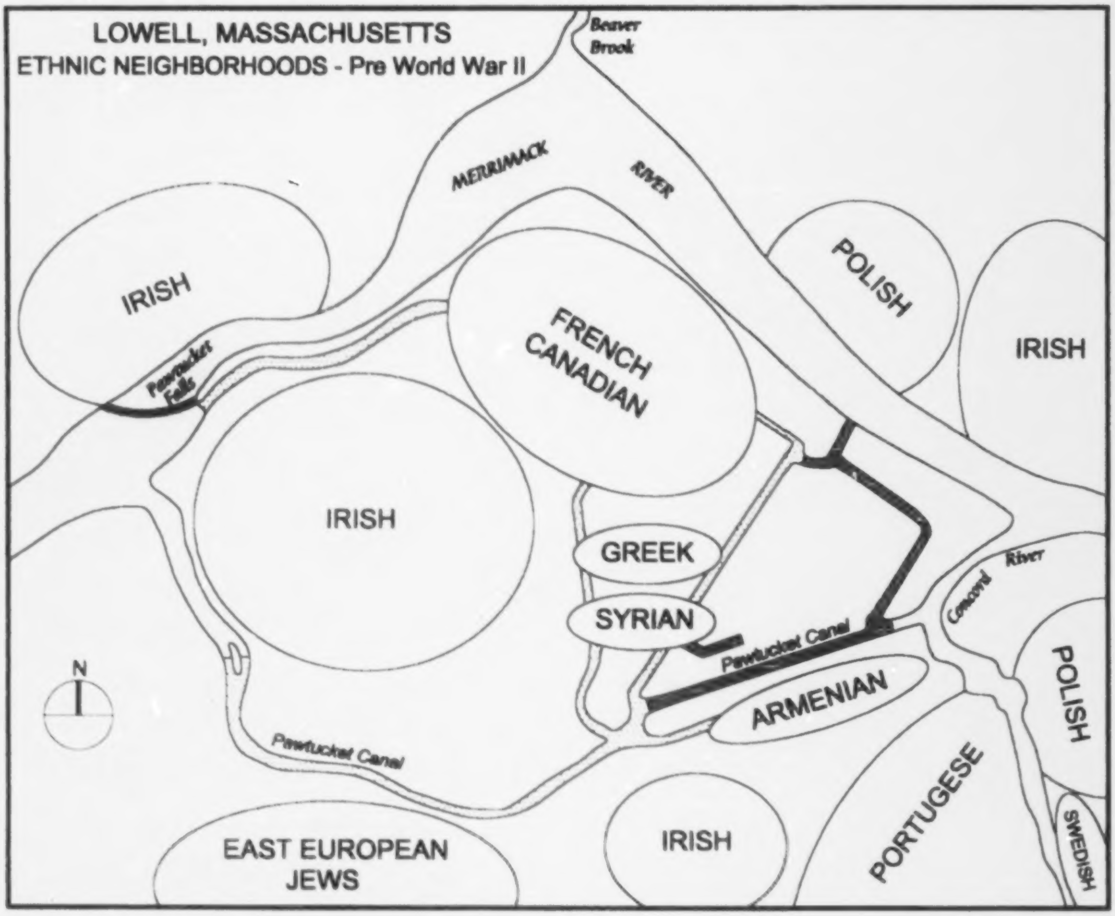
LOWELL, MASSACHUSETTS
ETHNIC NEIGHBORHOODS - Pre World War II
Beaver Brook
MERRIMACK
RIVER
IRISH
Pawtucket Falls
FRENCH CANADIAN
POLISH
IRISH
IRISH
GREEK
SYRIAN
Concord
River
Pawtucket Canal
ARMENIAN
POLISH
N
Pawtucket Canal
EAST EUROPEAN JEWS
IRISH
PORTUGESE
SWEDISH

Fig. 7.3: Lowell, Massachusetts: Ethnic Neighborhoods, Pre-World War II

The last decades of the nineteenth century were ones of growth and prosperity. Factories boomed as America grew economically, demographically, and geographically. Lowell's industrial base began to diversify into a wide array of products ranging from munitions to patent medicines. Lowell started attracting a number of immigrant groups from eastern, southern Europe, and the eastern Mediterranean. Jews, Poles, Portuguese, Greeks, Syrians, and Armenians became the dominant ethnic groups. A process of chain migration drew increasing numbers to Lowell. Pioneer immigrants, typically young men, found Lowell by happenstance, dwelled in boarding houses, worked in menial positions, and sent for their families, friends, and loved ones. Soon the nucleus of a neighborhood formed around a few stores, churches, and social clubs. These social institutions and residences formed a tight neighborhood that existed demographically in the public's perceptions. For a multitude of reasons, some incipient neighborhoods failed and their members remained mixed in Lowell's immigrant population. A handful of ethnic neighborhoods thrived growing into dominant sections of town and fully participating in the political process. The most successful groups developed neighborhoods with a range of stores, churches, primary schools, and social clubs as well as a handful of professionals such as lawyers, accountants, and doctors.

Growth and Change

The geography of Lowell again changed to serve this growth. Sections of the city along the railway corridors industrialized based upon steam instead of water power. Ethnic neighborhoods developed in the least desirable residential areas. Over the course of a generation or two, these ethnic neighborhoods expanded to include tenements and those areas with small single-family homes as well. Some neighborhoods also split to form two or more neighborhood subsets. Because of their numbers the Irish founded several neighborhoods based upon different parishes. The Poles, on the other hand, divided themselves over the regional political turmoils in the old country they carried to the United States. The expanding middle class moved towards the fringes of town facilitated by a trolley network. The very wealthy left for either Boston or adjacent farm towns creating a suburban ring around Lowell.

An undercurrent was emerging that would eventually prove to be Lowell's demise. The development of nationally-based firms altered the economic landscape. It was no longer practical to ship raw material long distances when factories could be constructed closer to the source of cotton. No doubt the growing southern rail network, cheap labor, and electricity also played important roles. Factories could be sited anywhere along a rail line that had access to water, coal, or electric power. Southern workers received lower wages than their northern counterparts, but the climate was warmer, and the infrastructure was new. Some of the larger electric looms proved too big to fit in the old brick mills. Some machines vibrated so strongly that bricks literally fell from the buildings. The canals that powered the mills also restricted their physical expansion. Three-or-four-story narrow brick structure with little heat or ventilation became relics compared to newer industrial architecture of wide and large, essentially single story, buildings with steel frames. Lowell, in short, became old, small, expensive, and remote. National firms relocated in North and South Carolina's *textile alley* as soon as the profit differentials between a declining old plant and the promise of a new one grew too attractive to resist.

Decline and Renaissance?

Consequently Lowell suffered a prolonged decline beginning with the early years of the twentieth century. The city tried to diversify into other regional industries such as footwear, but to little avail. By the Great Depression, Lowell was truly depressed and in economic shambles. A change in Lowell's fortunes was late in coming. It was only several decades ago that An Wang started his computer company in Lowell. He picked Lowell because the skills needed on the loom could be easily transferred to the computer assembly line, and workers could use their hands in fast and detailed operations. Unemployment was high; land was cheap, the city willing to try a new venture. So while the computer revolution altered Massachusetts's economy with firms situated on Route 128, America's Technology Highway, Lowell found its own place in the sun.

Wang's success drew a new round of immigration from Asian immigrant groups. Many looked to Wang's success as a mark of Asian pride, prosperity, and opportunity. Ten years ago, the Asian population comprised nearly twenty percent of the city's population. Vietnamese, Cambodians, and Laotians fleeing the ravages of war and political turmoil crowded into Lowell. Traditional neighborhoods of European origin were themselves in decline because of assimilation. The post-World War II generation had, by and large, left the old neighborhoods for the suburban American middle class. Ethnic stores were in terminal decline, parish numbers fell, and intermarriage as well as economic patterns diminished the strength of earlier ethnic ties. The massive Asian migration flooded into tenement areas across the city giving Lowell new blood and cultures. Because of their numbers, several formerly European ethnic neighborhoods were taken over by Asians (Fig. 7.4). Unlike their European counterparts, however, Asian immigrants Americanized rapidly. Attending

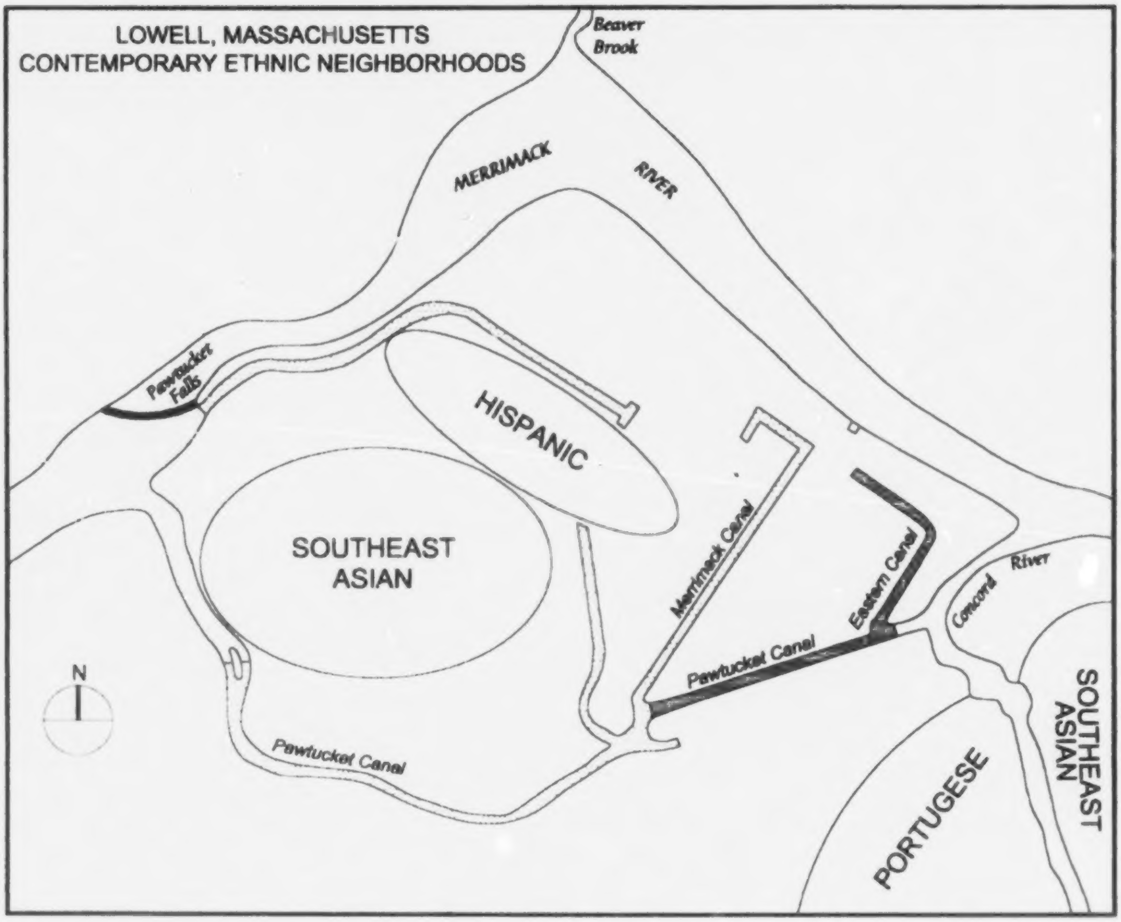
LOWELL, MASSACHUSETTS
CONTEMPORARY ETHNIC NEIGHBORHOODS
Beaver Brook
MERRIMACK
RIVER
Pawtucket Falls
HISPANIC
SOUTHEAST ASIAN
Merrimack Canal
Eastern Canal
Pawtucket Canal
Concord River
N
Pawtucket Canal
PORTUGESE
SOUTHEAST ASIAN

Fig. 7.4: Lowell, Massachusetts: Contemporary Ethnic Groups

schools and developing job skills, many prided themselves in buying houses and moving from the urban core within a few years of arrival. It mimicked the earlier pattern of immigration, participation, and assimilation; it occurred, however, at a faster chronological rate.

Lowell's prosperity, sadly, was short-lived. The Massachusetts miracle seems to have become the Massachusetts mirage. Cuts in defense spending, the shift of industrial production to the American South and offshore countries as well as competition from a global economy weakened the New England economy. Perhaps, the most ominous area of concern lies in the computer field. The competition between Silicon Valley and Route 128 seems to have shifted in California's favor as well as to other technological centers in the United States. Moreover, the rise of Microsoft in Seattle, Compaq in Texas, and thousands of companies hailing from everywhere has had profound effects on the regional economy. In Lowell, the restructuring of Wang Computers had a negative effect on the city. Wang was the city's largest employer. Many dependent businesses suffered and unemployment rose. The refurbished mills now have vacancies again and several storefronts in the downtown are empty.

The Future for Lowell

Today, Lowell is in a precarious position. Its contemporary prosperity is uncertain. Several high-technology firms as well as a variety of start-ups inhabit some of the old mills. The National Park Service has made a major commitment to Lowell turning it into the country's first national park celebrating our industrial past. Paul Tsongas, a former senator from Massachusetts, was instrumental in bringing this to pass. The National Park effort is more than an investment. It preserves a critical aspect of our country's heritage and has begun to make Lowell a cultural leader in the fields of industrial scholarship and multicultural relations. The park has also begun to instill a growing sense of self-awareness and importance into the fabric of city life.

In addition, several other museums have added to Lowell's cultural mix and tourist-drawing power. The American Textile History Museum, New England Quilt Museum, the Sports Museum of New England have recently opened in Lowell. Along with these museums, many come to Lowell to visit sites associated with the beat generation author, Jack Kerouac. One of the largest folk festivals in the country offers the city another aspect of cultural diversity.

Neither the National Park, nor the other museums, nor the increased cultural diversity have brought an economic recovery or transformed the city to a service economy. Lowell, like many formerly industrial cities, is poised between the two worlds of an industrial past and a post-industrial future. The small computer- or research-based companies have not provided many jobs for the traditional working class or immigrant laborer. The cultural and tourist destinations have not as yet generated a large service economy. In this way, Lowell is very much like many cities in the Northeast. It has a long and important history, but an uncertain future.

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8

CAPE COD: THE EPHEMERAL LANDSCAPE

Reed F. Stewart

For such a famous area, Cape Cod is a compact place, full of historical and geomorphological puzzles and examples. This essay emphasizes the changing nature of the Cape. Intertwined as people and places are, it sketches the human role, but pays more attention to the evolving natural conditions of the site than to history. Cape Cod is one of two capes along the coast of Massachusetts. To the north of Boston, the Cape refers to a rock-ribbed promontory, Cape Ann; a far more stable piece of geology and a much different story than Cape Cod (Fig. 8. 1).

Geology

Geologically speaking, Cape Cod is very young. Only a few thousand years old, it is still a work in progress. Each year its bluffs, barrier beaches, and spits are reshaped, often to the surprise of its even shorter-lived human inhabitants. That morphological dynamism is a result of the earth's

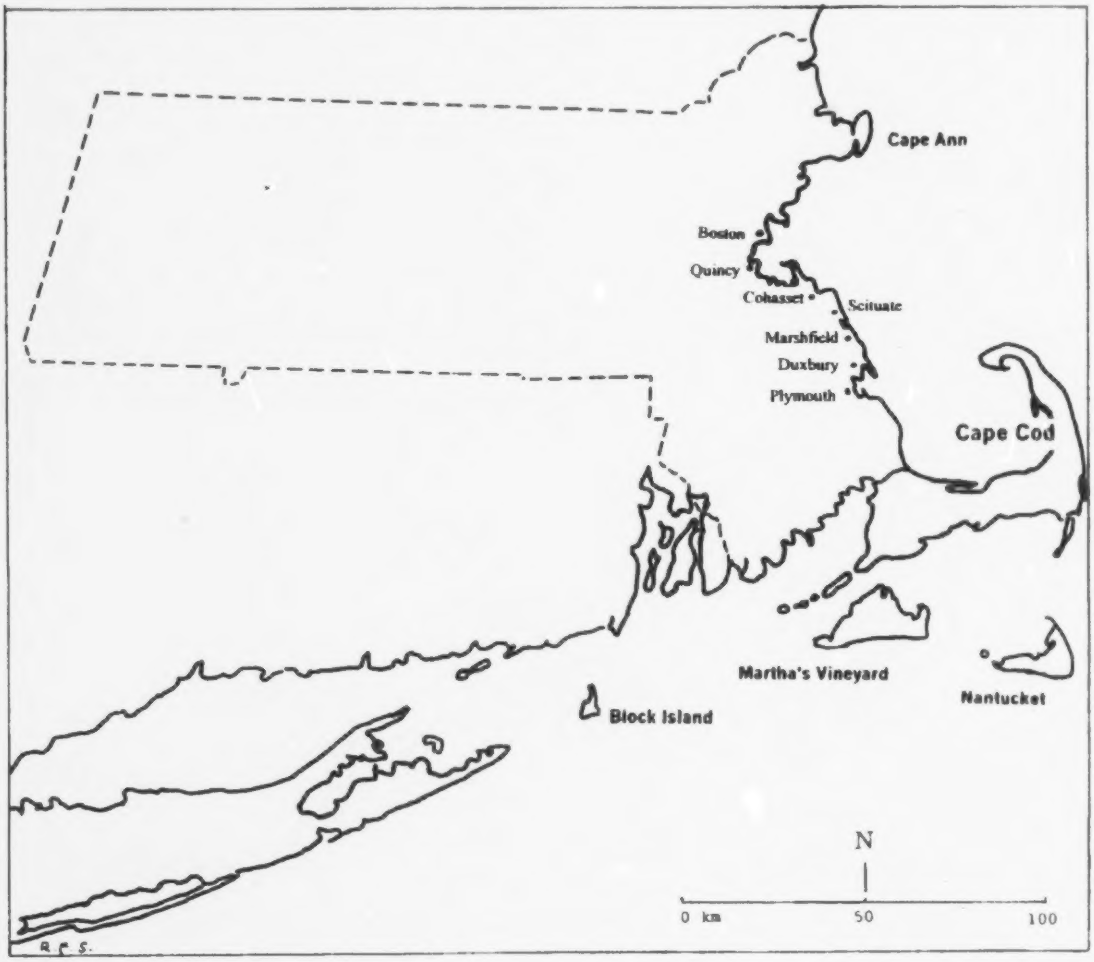

Cape Ann
Boston
Quincy
Cohasset
Scituate
Marshfield
Duxbury
Plymouth
Cape Cod
Martha's Vineyard
Nantucket
Block Island
N
0 km
50
100
R F S.

Fig. 8.1: Massachusetts, *In Situ*

millennia-long transition from the most recent glacial age, as global warming has melted masses of ice and raised the worldwide level of the oceans, perhaps by as much as three hundred and fifty feet (107 meters). What are now fairly shallow parts of the continental shelves, were once open to the air and vegetated with whatever the soils and climates encouraged.

Along the Massachusetts coastline as recently as five thousand years ago, one could have walked across a coastal plain to what are now the islands of Martha's Vineyard and Nantucket. The ridge of Cape Cod, along which Route 6 now makes its way, was only an unremarkable set of low hills on that gently rolling plain. To reach the shoreline from those hills, the residents of that time, ancestral Amerindians, would have walked or canoed some five to twenty-five miles. Probably by five thousand years ago, the overall environment of the precursor to coastal Massachusetts would have encouraged growth of mixed hardwood and evergreen forests with estuarine marshes and dune grass along the shores. The environment would have offered ample rewards from gathering and hunting, both in the uplands and along the beaches. Since most of the soils of the area were not particularly fertile, shifting cultivation would also have been important.

Post-Glacial Landforms

The whole area was, and still is, in transition from the effects of melting ice. From the city of Quincy on southward as far as New Jersey, most coastal features are directly or indirectly the result of the massive glaciers. They acted as bulldozers to create the moraines that provide the high ground of Plymouth, Cape Cod, Nantucket, Martha's Vineyard, and Block Island, as well as of many locally important ranges of hills on the mainland (Fig. 8.2). South of the granitic Blue Hills range, itself much shaped by glacial abrasion, little bed rock can be easily seen. The land is mostly either of direct glacial deposition or the result of the large volumes of water that came from the melting of those ice sheets. Streams eroded outwash channels across the outwash plains to the ocean; channels which we now see, for example, as dips in the fairly level course of Route 28 as it takes traffic east and west along the south side of Cape Cod.

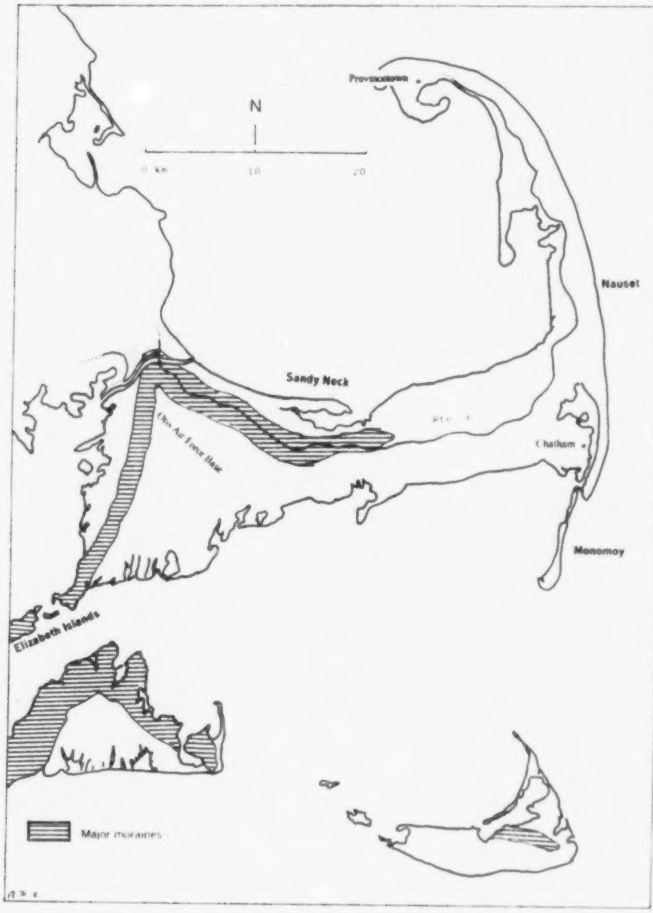
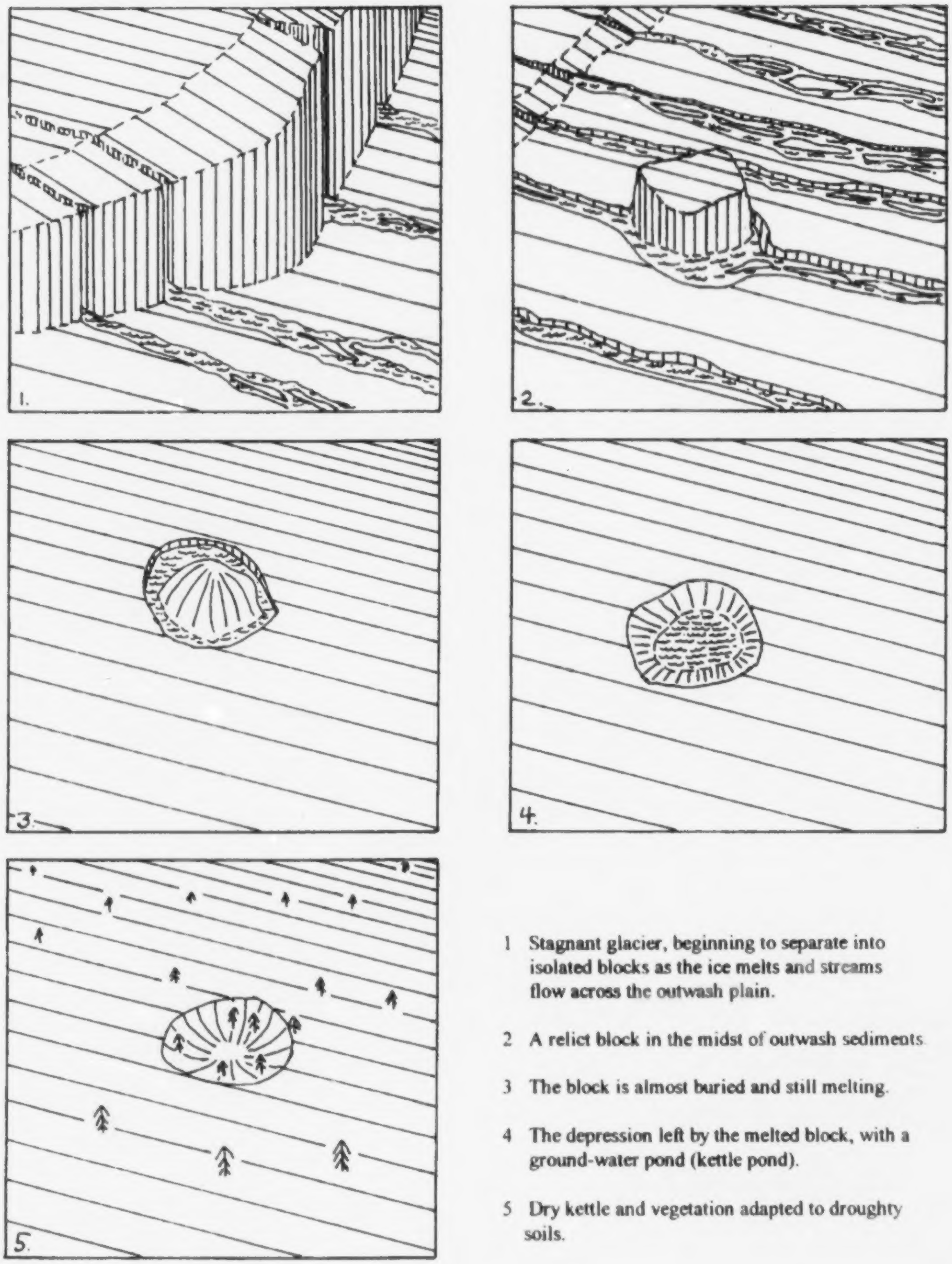


Fig. 8.2: Major Moraines on Cape Code and the Islands

In some places, as the sheet of ice thinned, it separated into blocks that were more or less covered by the debris brought by the melt-water streams. During the lengthy time that it took for those huge ice cubes to melt, the outwash plain built up around them. As the ice blocks gradually melted, they left pits in the plain called kettle holes (Fig. 8.3). In many places the pits are deep enough to reach the water table and have kettle



1 Stagnant glacier, beginning to separate into isolated blocks as the ice melts and streams flow across the outwash plain.

2 A relict block in the midst of outwash sediments.

3 The block is almost buried and still melting.

4 The depression left by the melted block, with a ground-water pond (kettle pond).

5 Dry kettle and vegetation adapted to droughty soils.

Fig. 8.3: Schematic: Decades Long Sequence of Kettle Formation

ponds in them. In the strict sense of the term, no streams flow out of kettle ponds. Kettle holes have been steadily filling in with debris and some are now covered with mats of floating vegetation, resulting in quaking bogs, which are fascinating to explore with adequate guidance. The generally level character of the coastal plain contributes to cold air being trapped in the exit-less depressions on still nights. That, in turn, affects the vegetation and one can see a distinct change of shrubbery on the sides of the kettles, often grading to a covering of hardy grass at the bottom.

Glacial Sorting

The advancing ice sheets did little sorting of the material they had scraped from areas farther north. The result is that the moraines, both terminal, such as Cape Cod, and inter-lobate, like the Pine Hills of Plymouth, are a jumble of boulders, gravel, sand, clay, and silt from all over. Melt-water, however, did a lot of sorting, and in many sand pits on the Cape there are clearly stratified deposits. One result of that sorting was lenses and sheets of clay that were put down at the bottoms of temporary glacial lakes. It may seem odd that a mass of sand and gravel such as Cape Cod has so many perched wetlands and places that are not suited for home septic systems. Blame the long vanished lakes of glacial melt-water!

The glaciers accomplished some sorting of the loads they carried; huge boulders tended to work their way to the top of the heap and can be seen in almost random places. The most prominent of them are termed glacial erratics. Some are prominent in local history, and have specific names. The entire highland section of the Cape can be thought of as a conglomeration of material that has wandered from afar, erratically. Many of the smaller boulders have long been subject to frost heaving and are at, or just below, the surface of the ground in a good position to be nuisances to farmers. The early Europeans, needing to mark out property boundaries and wanting to clear fields at the same time, stacked boulders in rows and called them fences. One often comes across stone walls (fences) in the middle of the woods. They are sure signs of former agricultural uses. The absence of lines of stones, however, does not mean the former absence of farming because the occasional glacial lake beds are generally free from boulders—and stone fences. In at least one community, an enterprising contractor bought up hundreds of feet of stone fences and had the boulders crushed for road building material.

As the glaciers melted and the sea level rose around the globe, the lower hills of the Massachusetts coastal plain were submerged. Low hills, where Georges and Stellwagon Banks and Nantucket Shoals are now, became shallow water feeding grounds for cod, hake, lobster, and striped bass, among others. Higher hills, stretching southeast from what is now Woods Hole, became the Elizabeth Islands. Martha's Vineyard and Nantucket were cut off from mainland strollers. In addition, the sea advanced across the outwash plain and extended up into the outwash channels, making estuaries and building sand dunes. The salt water spread north around the hills of the Cape Cod moraine and flooded what is now Cape Cod Bay or the southern reaches of the Gulf of Maine. The Cape's morainal hills now act as a southern limit to the ebb and flow of tides in the Gulf and thus contribute somewhat to the very high tides of the Bay of Fundy in Nova Scotia, as the water oscillates in the basin of the Gulf of Maine (Fig. 8.4).

Coastal Processes

Coastal processes are also an important part of change on the Cape. While the water level was rising, its breaking waves transformed the shores. Along this part of the North American coast, the dominant storm wind directions are from the southeast, east, and northeast. When strong blasts come from the north, west, or south they come from across land and do not have the chance to push much water and waves before them. In fact, the land shelters the water from the wind.

As waves approach land, they usually come in at an angle to the beach. The waves run up on the beach at that angle and then the water drains back down slope more towards the perpendicular (Fig. 8.5). The water carries the sand onshore, and the water's action may also take sand away from the beach. The result is an overall movement of water along the shore that produces a longshore

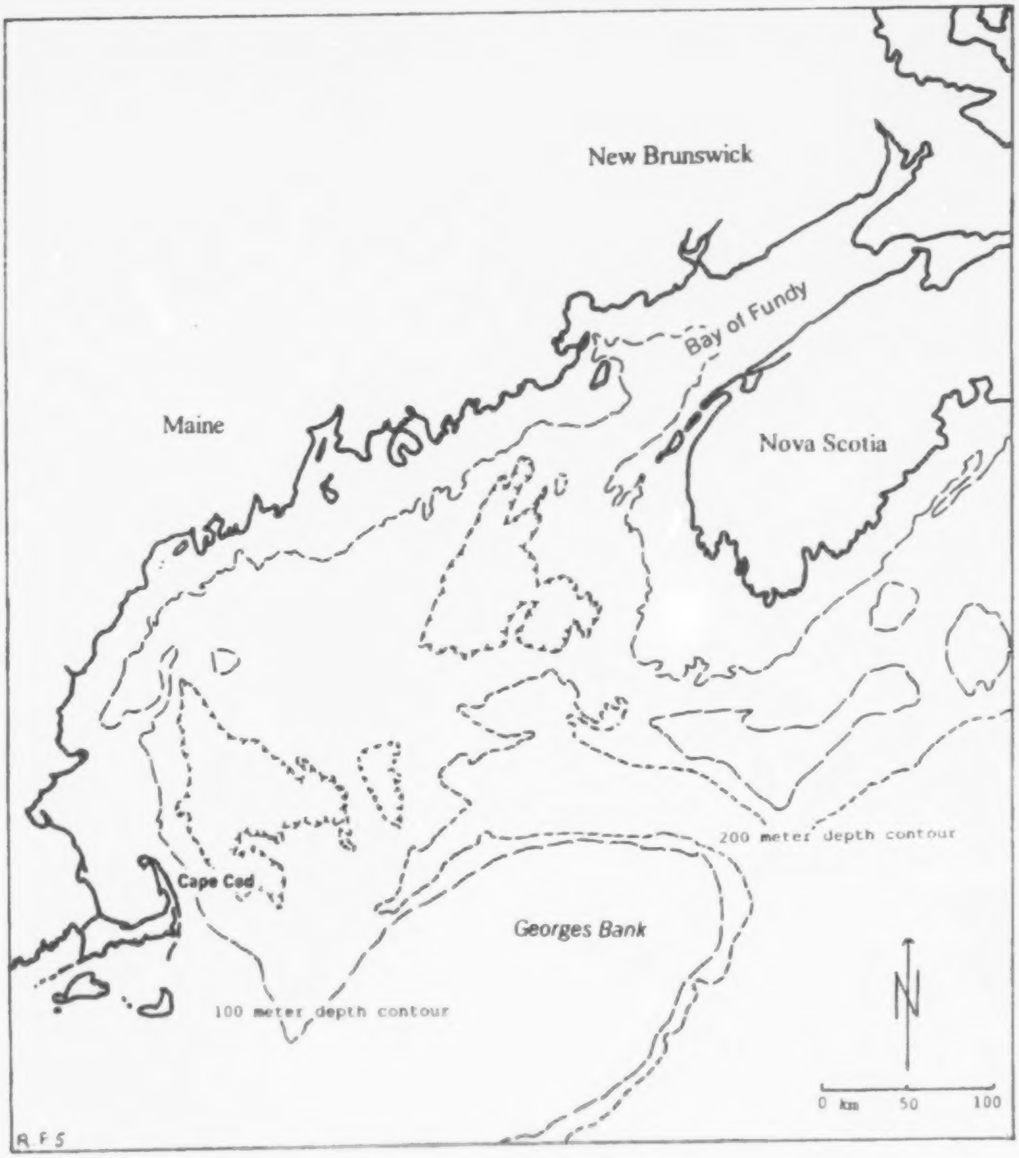

New Brunswick
Bay of Fundy
Maine
Nova Scotia
Cape Cod
Georges Bank
200 meter depth contour
100 meter depth contour
N
0 km 50 100
R.F.S

Fig. 8.4: Cape Code and Environs

drift of sediment. Storm waves take away more material from the dunes and bluffs than they bring in.

Much of the storm-eroded sand and gravel is carried a little way off shore and then settles in sand bars. There, it acts as a supply for the gentler waves of calm weather to carry shoreward to form dunes and beaches, always acting in the direction of the wind. Winter winds generally do the eroding and the summer zephyrs generally do the building. Tempests and halcyon days do not, of course, abide strictly by seasons and summer hurricanes contribute to abrupt coastal reshaping while sometimes rebuilding is done in the winter.

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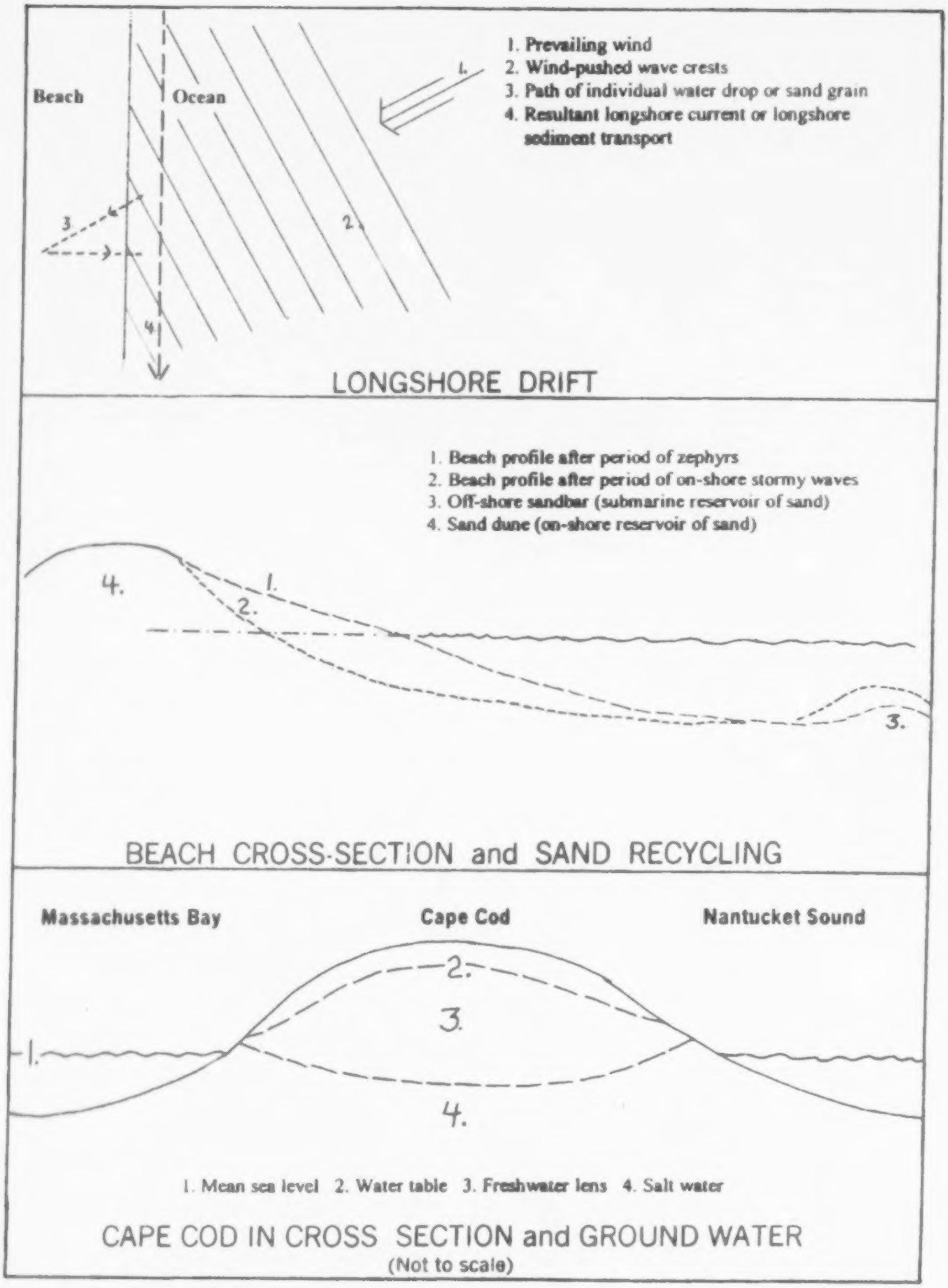
Beach
Ocean
1.
2.
3
4
1. Prevailing wind
2. Wind-pushed wave crests
3. Path of individual water drop or sand grain
4. Resultant longshore current or longshore sediment transport
LONGSHORE DRIFT
1. Beach profile after period of zephyrs
2. Beach profile after period of on-shore stormy waves
3. Off-shore sandbar (submarine reservoir of sand)
4. Sand dune (on-shore reservoir of sand)
4.
1.
2.
3.
BEACH CROSS-SECTION and SAND RECYCLING
Massachusetts Bay
Cape Cod
Nantucket Sound
1.
2.
3.
4.
1. Mean sea level 2. Water table 3. Freshwater lens 4. Salt water
CAPE COD IN CROSS SECTION and GROUND WATER
(Not to scale)

Fig. 8.5: Coastal Processes and Ground Water

After several days of gentle winds, one can find gradations of sand and pebble size material on a gradually sloping beach. The larger are lower down, while the smaller grains are carried higher up the beach by waves with less energy, only to be stranded there as the water either soaks into the sand or flows back too gently to carry much of a load back down hill. The farthest advances of the wavelets are rimmed by arcs of deposited sand: temporary foot prints of aqueous visitors. When the tide recedes, those lightweight particles are left to dry. If the wind direction is right and the strength of the breeze is sufficient, that sand is moved upslope, away from the water and it may be incorporated into sand dunes. Dune grass, roses, poison ivy, and other plants tend to stabilize the dunes, though strong winds and waves can cut them down. Sometimes, sand is washed back into the ocean, and sometimes it is distributed farther inland with interesting, and often beneficial, effects on the vegetation it may seem to smother. That sand cover contains plant nutrients that the dune vegetation needs. The result of the apparent smothering is a burst of new growth in the following spring. This anchors the sand against storms and helps extend the dune system inland. Over time, there may be a succession of vegetation, and shrubs and trees can colonize what once was seen as simply sand.

The huge sand dunes of Provincetown and Monomoy, among those in other places, are the current resting places of material that has gone through repeated cycles of movement from land to sea and back (Fig. 8.2). They can be thought of as one temporary end of a system that extends out under the ocean to the off-shore sand bars that are also temporary storehouses of masses of sand, a coastal geomorphological resource. That system is a kind of omni-directional spatial conveyor belt that moves sand back and forth along the coast and on and off shore as the winds, and thus the waves, shift in direction and strength. During the span of a year, the conveyor belt shifts sediments in accord with the dominant winds, but there are also periods of reversal of the longshore drift. The title of a recent book, *The Beaches are Moving*, by Wallace Kaufman and Orrin Pilkey (1992) summarizes the situation clearly. As long as the sea level continues to rise, one should also note that the shoreline is retreating.

The coastal plain is gradually being submerged, as the eastern slope of upland Cape Cod gradually wears away and the ocean redistributes its material to the north and south. That is particularly evident where the ocean is encroaching on the Cape Cod moraine. The moraine ends in Truro about 12 miles (17 km) to the south, and the northern part of that town and all of Provincetown are made of the redistributed sands that the ocean has swept along from the moraine represented by the cliffs of Nauset (Fig. 8.2). Land is made to the south of Nauset in the form of barrier beaches that extend past Chatham to Monomoy. The northward moving sand does not stop at Provincetown, but sweeps around to help make Cape Cod Bay ever shallower, whereas the hazardous Nantucket Shoals to the south of the Cape are the temporary stopping place of the material that moves to the south. The word temporary is used because eventually, the sand cascades down the continental shelf and is lost to the mainland.

The same principles apply to the shores along the south side of the Cape, to the islands of Nantucket and Martha's Vineyard, and to the inner shores of Cape Cod Bay. For instance, the lovely dunes of Sandy Neck in Barnstable have their origin in the bluffs farther north along Cohasset, Scituate, Marshfield, Duxbury, and Plymouth (Fig. 8.1). The land-changing action of the sea can be devastatingly rapid to humans or misleadingly slow. On the average, the outer bluffs of Cape Cod are cut back three feet (1 meter) each year. Many structures, lighthouses and homes have had to be moved or abandoned and reactions to that necessity are varied. Some people and communities accept the inevitable while others attempt to armor the coast against erosion with sea walls. Although staving off erosion may work in a few places for a short time, not only is it extremely expensive, but it disrupts a long-shore system. In cutting off the supply of sand and gravel to the longshore current, that same current is freed of a load it has been carrying. That allows the current more energy to pick up material elsewhere, *downstream*. One can clearly see these effects on a map where jetties have been built perpendicular to the beach in order to stop erosion at a particular spot. To the up-stream side of the wall that sticks out into the water, sand has been built up beyond the average shoreline. Down-stream, on the other side, scalloping occurs into that average shoreline.

Post-Wampanoag Settlement

The Cape is built of sand, gravel, and clay, shaped and redistributed by glaciers, winds, and waves. When the first European records begin, the attractive peninsula was well wooded with timber-size trees. The Wampanoags had been living there quite comfortably for many generations, indirectly depending on that vegetation. Though sand is not a particularly good growing medium, the glaciers provided an additional gift. When the glacial lakes of the North American mid-continent dried up, the sediment from the lake bottoms blew in tremendous dust storms as far east as the Atlantic. Some of that loess was left in what is now New England and helped lichens prepare the way for herbaceous organisms. In some sand pits of the area, the yellow tinge of loess is evident intermixed with sand at the top one or two feet of the exposure. Still, farming and lumbering are extractive ways to use the limited soil fertility and when the combination of forest humus and loess is exhausted, few crops can be grown in the same plot without excellent and arduous mixed animal and crop husbandry. The Amerindians understood this and used some manuring and shifting cultivation to supplement their gathering and hunting.

The early European settlers had a tough row to hoe, as their farming practices from England did not cross the Atlantic to Massachusetts with great success. Although the Pilgrims learned from the Wampanoags, it was still hard-scrabble farming for a sedentary populace. The Pilgrims were not the earliest Europeans on the scene, of course. Leaving aside the Vikings, who may or may not have sailed this far south, the coast was well known to fishing crews from Greater and Lesser Britain, Basque country, and Iberia. When the refugees from Holland arrived several years after the English colonized Jamestown, the shore had been repeatedly mapped and names given to the various promontories and bays. Their first landing had been in what is now Provincetown, but not enough fresh water nor arable soil was available. The Pilgrim's dinghy (shallop) coasted the inner shore of Cape Cod Bay and found a good brook at the head of a set of sheltered anchorages, presently known as Plymouth, Kingston, and Duxbury harbors (Fig. 8.1).

Eventually, the abundance of lobster, cod and other shell- and fin-fish supplemented the meager crops and the Plymouth Colony stabilized. The settlers then retraced their steps, and the European occupance of Cape Cod began. At this time, of course, the Cape was not as separate from the mainland as it now is. The Canal was only a dream in Miles Standish's eye and was not dug until the late 1800s. One unexpected benefit of that canal is that it has helped stop the spread of rabies among the wild animal population and the Cape is free of that scourge. Few Amerindians were living on the Cape when the Pilgrims arrived because aboriginal numbers had been drastically reduced by small pox brought by the earlier European visitors. The colonists spread with little effective opposition. To be sure, an ancient village of Wampanoags is in Mashpee on the western Cape, but they have not been nearly as successful in asserting their former dignities and rights as have their relatives on Martha's Vineyard. The very name of the western end of the Vineyard, where many Amerindians have long lived, has been officially changed to Aquinnah from Gay Head. From the mid-1600s, the history of the Cape is essentially that of European occupance.

The Cape served as a base for fishing and maritime trade. An intriguing look at the economy and society of the times can be found in the many novels by Joseph C. Lincoln, set in towns on the Cape in the mid-1800s. Farming provided a bare subsistence; anything more than that came from cod, whales, and ocean transport. During the course of building houses, wagons, and ships and cooking food, the hardwood forests were just about depleted. Settlers used no more house heating than was absolutely necessary. No in-door plumbing needed to be protected from sub-freezing temperatures in the winter months and the settlers dressed as warmly as possible when necessary, especially since houses were quite drafty. In the Cape's infertile soil, reforestation was not rapid even where humans tolerated it. Since reforestation was not an accepted idea and since the best land was fully used land, little reforestation occurred.

The question of the origin of the now widespread skimpy mixed oak and pine woods is debatable. Certainly the pine-barrens are tolerant of drought and fire. They need to be, since most of the soil is, to quote the Soil Conservation Service, "excessively well drained," and since forest fires have been an expected and frequent occurrence until the advent of motorized fire-fighting in the mid-1900s. At least some of the pine-barrens may stem from pre-European era fires although some seem only one or two hundred years old. The shaded streets of the villages of the Cape are the attractive results of generations of planting and care, not the remnants of indigenous woodland.

Water Resources

All the drinking water for the Cape comes from what has been recognized only recently as a sole source aquifer, and the sole source of water is local precipitation. It is found in a subterranean lens of rainwater running the length of the Cape and from shore to shore. "That is all there is, folks; there ain't any more." To make matters worse, the lens steadily loses some of its fresh water to the surrounding salt waters. Within the aquifer, water percolates slowly from the central land ridge to the lower elevations. As rain falls and snow melts, the aquifer is recharged. As springs discharge into the ocean or people pump water out, the lens is diminished. The trick for the future of Cape Cod is to keep the withdrawal less than the recharge. Too much withdrawal and the surrounding salt water creeps farther underground, on shore so to speak, and it taints the drinking water wells. In addition, whatever is dissolved in the lens of potable water stays there for long periods of time. This has come to be understood, belatedly, as a major problem near Otis Air Force Base where toxic substances can be found in plumes spreading toward town and individual wells (Fig. 8.2). Municipal solid waste facilities, dumps as they used to be called, and the customary practices of

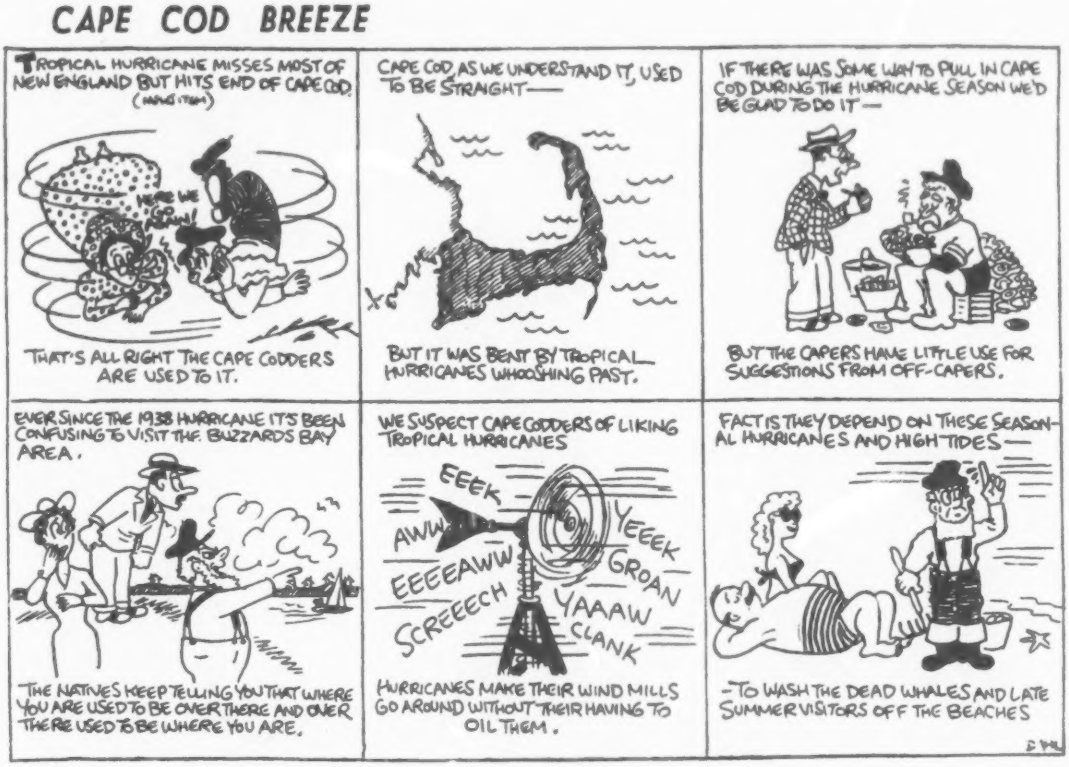
CAPE COD BREEZE
TROPICAL HURRICANE MISSES MOST OF NEW ENGLAND BUT HITS END OF CAPE COD.
HERE WE GO AGAIN!
THAT'S ALL RIGHT THE CAPE CODDERS ARE USED TO IT.
CAPE COD, AS WE UNDERSTAND IT, USED TO BE STRAIGHT—
BUT IT WAS BENT BY TROPICAL HURRICANES WHOOSHING PAST.
IF THERE WAS SOME WAY TO PULL IN CAPE COD DURING THE HURRICANE SEASON WE'D BE GLAD TO DO IT—
BUT THE CAPERS HAVE LITTLE USE FOR SUGGESTIONS FROM OFF-CAPERS.
EVER SINCE THE 1938 HURRICANE IT'S BEEN CONFUSING TO VISIT THE BUZZARDS BAY AREA.
THE NATIVES KEEP TELLING YOU THAT WHERE YOU ARE USED TO BE OVER THERE AND OVER THERE USED TO BE WHERE YOU ARE.
WE SUSPECT CAPE CODDERS OF LIKING TROPICAL HURRICANES
EEEK
AWW
EEEEAWW
SCREEECH
YEEEK
GROAN
YAAAW
CLANK
HURRICANES MAKE THEIR WIND MILLS GO AROUND WITHOUT THEIR HAVING TO OIL THEM.
FACT IS THEY DEPEND ON THESE SEASONAL HURRICANES AND HIGH TIDES—
—TO WASH THE DEAD WHALES AND LATE SUMMER VISITORS OFF THE BEACHES

Fig. 8.6: Cape Code Breeze (Reprinted with permission from the *Boston Herald*)

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fertilizer and insecticide use are also of great concern to the Cape and Islands, among other places of glacial deposition. The growing numbers of people with their accompanying septic tanks and municipal sewage systems add greatly to the problem of water quality control (Fig. 8.6).

The Cape Economy

From the 1700s through the early 1900s, the Cape's economy waxed and waned with the rise and fall of U. S. trade and with whaling's prosperity. Fishing was the dependable mainstay, but wars interfered with both trade and whaling, and the development of petroleum deposits diminished the major use of whale oil for illumination. The population of the Cape declined along with that of most of rural New England, beginning in the mid-1800s as economic opportunities opened to the west. In the later 1800s, wealthy people from Boston and New York and the cities in between began to use the railroad and vacation on the Cape. Their summer cottages were often palatial, though without central heating. That was the beginning of the resort economy of the Cape. In the 1920s, the railroad began to bring people of more modest incomes to the area. That trend gathered force after World War II, though it was the automobile rather than the train that brought the vacationers. The Cape's finances improved tremendously. Today, the process has gone a step further as the seasonal or two-week resident has been almost supplanted by the one or two day visitor in many towns. At the same time, the Cape has become a retirement community. It is difficult for a young high school or college graduate from Cape towns to find a place that he or she can afford to rent year round, to say nothing of buying. Population growth has become so pressing an issue that a major political question in most towns is the preservation of the distinctive character that brings in the retirement and recreational dollar. Open-space and historic preservation are hot topics, as are marina development and traffic management. As a whole, Cape Cod has a surprisingly large portion of its land set aside for passive recreational use. That includes the Cape Cod National Seashore as well as hundreds of acres under the protection of agencies such as the Massachusetts Audubon Society.

For such a well-known resort area, Cape Cod also has, unexpectedly, many small work-force industrial and commercial establishments taking advantage of the electronic age. Employment opportunities are still available at Otis Air Force Base. Taking all these economic elements together, one can tritely say that the Cape is in tension. It has a rapidly increasing population density while, to return to the opening theme, it has a steadily decreasing physical surface area. Any substantial rise in global sea level will hurt Cape Cod—as it will many areas of the world.

Conclusion

This brief introduction to the Cape, is just that: it hints only at the physiographic enjoyment to be found in solving the puzzles of the glacially- and hydrologically-created landscape. The bibliography may serve as a guide to amplification, but you have to be here to appreciate the lovely place with all its complexity and challenge. Schedule yourself at least a week to explore a small region that exemplifies a diversity of human uses on a changing land. Be sure to return within the next few thousand years, though, for even within a few decades, this description will need significant revision. The ocean, that molder of Cape Cod, is inexorably whittling away at its eastern coasts.

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9

PACK YOUR BAG (ACTIVITY)

Louise B. Swiniarski

Introduction:

"Pack Your Bag" is a collaborative effort between college personnel at Salem State College of Salem, Massachusetts and its campus school, the Horace Mann Laboratory School, to develop an exchange program between a third grade class and their counterparts at the International School of Geneva, Switzerland. In the program, the children learned about their city, Salem, Massachusetts, through the application of the fundamental themes and geographic concepts of location, place, interactions, movement and region. To apply these concepts, the children gathered and analyzed data about their community. They visited key places in the community, invited a well known Salem artist to their class, collected materials, studied and made maps, wrote and taped their findings. Then, the children shared their knowledge with the Swiss school by making a big book, shaped like a suitcase, and filled it with artifacts, brochures, books, and tapes about Salem. The recipients replicated the project and then repackaged the big book with similar articles from their community and returned it to the United States in exchange for the materials from Salem.

These lessons exemplify techniques for teaching global geography in a developmentally appropriate approach for third graders. The concepts are framed in the context of the children's personal experiences and then broadened to include a global perspective.* The outcomes include an appreciation of one's community and its place in the world, the development of an international networking of eight-year olds, the promotion of research skills, and the application of the knowledge of geographical concepts.

Time: 40 minutes for each daily activity plus the field trips.

Grade level: Third grade

Concepts*:

Relative Location: Salem is located in the northeast region of Massachusetts on the Atlantic coast (*See* Chapter 6, Fig. 6.2).

Place: Its early Puritan settlement has given the present city its identity as the Witch City and accounts for the many historical and cultural interests in the city.

Human and Physical Interaction: Its geographical location shapes the various areas of industry and commerce. Over time, Salem was a maritime center, an industrial magnet for leather and textile manufacturing, as well as a fishing, toy, and candy-making center. Now, it relies on a variety of businesses, professions and tourism.

Movement: Many people migrated to Salem and continue to do so. Ideas and products also find their way to and from Salem. The game, Monopoly, originated in Salem and was adapted for use in thirty-two different countries.

Region: Salem is located on the North Shore of Boston, is the seat of Essex County, the second oldest settlement in the Commonwealth of Massachusetts, a part of New England, and the first

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*The concepts listed above are derived from those published in Joint Committee on Geographic Education 1984. *Guidelines for Geographic Education: Elementary and Secondary Schools.* Macomb, Ill. and Washington, D.C.: National Council for Geographic Education and Association of American Geographers. This publication also includes learning skills in geography. The themes above and the geographic skills can also be found in a somewhat different form in *Geography for Life: National Geography Standards* 1994. Washington, D.C.: National Geographic Research and Exploration for the American Geographical Society, Association of American Geographers, National Council for Geographic Education, and the National Geographic Society.

place to be named Salem in the United States of America.

Skills:

The children
- construct maps of their street, community, state and country;
- read and interpret historical maps of their community; and
- recognize their community on remote sensing images.

The children
- identify features and factors about their community.

The children
- investigate commercial, industrial, and physical aspects of their city's past and present; and
- identify people who make the community unique.

The children
- investigate their families' migration patterns to write a family history; and
- cite examples of common connections between their community and the global setting.

The children
- describe their community in the context of its local region and its place in the global village.

The children
- work together in cooperative projects as well as individual assignments.

The children
- share their findings in a variety of media: writing, video taping, photography, and artwork.

Materials:

Atlas, globe, local, state, and national maps, old maps, remote sensing images, pamphlets, brochures, books about the community, newspapers, community symbols, video tapes, camcorders, VCR, overhead projectors, cameras, film, paper, computer, Internet, art supplies such as crayons, paints, markers. (*See*, particularly, Pikora's Chapter 6, "Salem, Massachusetts: The Changing Geography of a Coastal Community in New England," in this book.)

***Activities*:**

Day One: Map each child's mailing address by dividing a piece of paper into four parts: (1). map one's street, (2). the city in context with its neighboring communities, (3). the city relative to its position in the state, and (4). the state in relation to the country. Use local, state and national maps and atlases for references and guides.

Day Two: Study old city maps from the archives of the Peabody-Essex Museum. See if the children can locate their home addresses. With a collection of old maps determine when each child's street came into existence.

Day Three: Take a field trip about the city in the "city trolley" to collect brochures and a copy of the city shield from City Hall. Visit industries, businesses, landmarks, famous residences, travel agencies and county and civic buildings. Use a recent city local map to mark the places and the route of the trip. Notice that the city shield differs from the typical witch motif of commercial souvenirs. Have the children investigate the meaning of the symbols of the shield.

Day Four: In groups, have the children design and write a brochure on one of the commercial or industrial aspects of the city. Find Salem's web page. Get additional information about Salem and Geneva on the Internet.

Day Five: Invite a guest speaker to share his or her contributions to the city.

Day Six: Have the children interview family members about reasons for migrating to Salem. Have the children write an autobiography about where their families have lived, describe where they currently reside and project where they would like to be in the future.

Day Seven: Using the Internet, identify a "sister city" or a place that has similar features. Identify similar resources, products, forms of government, recreational sites, and housing.

Day Eight: Have the children make post cards that illustrate and describe something or somewhere unique about Salem. Send the cards to the exchange school.

Day Nine: Collect and read books about Salem's past and present. The city's library, museums, and bookstores have a plethora of materials on the witchcraft period, the city's heyday as a maritime center, and as an industrial city. Salem has been the setting for several books and plays. Have the children select both fictional and factual resources.

Conclusion:

Construct a big book. Put all of the materials in the book according to the geographical concepts. Record all of the class activities to view and share in video and photography. Mail the big book and the recordings to Switzerland. Have the recipients return a similar project.

Evaluation:

Recording: To document the children's progress and contributions, video tape, photograph, and record their activities and work.

Portfolio: Use the big book as a class portfolio in which the children need to describe why each item reflects a geographical concept.

Tests: Check for accuracy about the geographical concepts as they are reflected in the writings of the brochures, postcards, and autobiographies.

File Folders: Hold a conference with each child throughout the project. Keep records of conferences and each child's work in a file folder.

Check list: To document map reading skills, keep a check list of children who can identify the community in a variety of maps and remote sensing images.

Reference

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Background:

This project was implemented with third graders of the Horace Mann Laboratory School of Salem, Massachusetts and the International School of Geneva, Switzerland. I would like to acknowledge the contribution of Linda Connell, a teacher at Horace Mann, for her help with this project. The project was funded in part by the Frances R. Dewing Foundation.

10

Make Way For Ducklings: A Bird's-Eye View of Boston (Activity)

Stephen S. Young and Katie Quinlan

Introduction

This learning activity provides an enjoyable way for young students to learn some basic, though essential, geographic principles such as scale, map reading, land-use analysis, and air photo interpretation. By using the classic children's story, *Make Way For Ducklings* by Robert McCloskey (originally published in 1941 and again in 1969 by Penguin Books, Ltd., New York), we transform the students into ducks, allowing them to view Boston from a vastly different perspective than they have of the city from the ground. This lesson uses a satellite image along with a series of air photos of Boston to give the students a duck's perspective of the earth. Some of the greatest tools that geographers now have are satellite and air photos that provide us the ability to view the earth from above, much as a duck would. This lesson will introduce basic geographic skills in association with the story line of *Make Way For Ducklings*. The lessons are simple and clear, attainable for all levels of elementary students depending on how deeply you wish to present the material. Each section also has an enrichment portion that permits students to undertake more complex tasks than outlined in this learning activity. Although this lesson focuses on Boston, it is really only a jumping off point, as satellite images and air photos are now available to the public for the entire United States, and therefore, you can adapt the plan for your local area as well. So, let us put on our wings and fly over Boston in search of a place to raise our young and learn about geography.

Grade level: Elementary grades 1—5

Time Required: 2 days to 2 weeks or more (depending on the number of options used)

Themes, Key Ideas, Vocabulary, and National Geography Standards*:
scale, representative fraction, aerial perspective, land use analysis, animal habitat, map reading, air photo interpretation.

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.

4. The physical and human characteristics of place.

8. The characteristics and spatial distribution of ecosystems on the Earth's surface.

**Geography for Life: National Geography Standards* 1994. Washington, D.C.: National Geographic Research and Exploration for the American Geographical Society, Association of American Geographers, National Council for Geographic Education, and the National Geographic Society.

Objectives: This lesson is designed to introduce the students to:

- the *aerial perspective*, i.e., seeing things from above;
- the idea of scale, and how scale changes;
- maps;
- the techniques of reading a map;
- the idea of land use;
- satellite images and air photos to students;
- the methods of reading and interpreting air photos;
- discuss what type of environment animals need to live in (habitat);
- discuss the type of environment humans live in; and
- make the study of geography an enjoyable activity.

Skills:

- Reading maps
- Interpreting air photos and satellite images
- Analyzing air photos with different scales of data
- Classifying land use on maps and air photos
- Analyzing the needs of animals
- Analyzing how we structure cities
- Working in groups
- Developing stories and story telling

Materials:

- Pencils, colored pencils or crayons, rulers, tracing paper (Polaroid camera or any camera)
- Satellite image from Chapter 2, Fig. 2.1 in this book
- Three air photos from this Lesson (Air photos 1, 2, and 3 at the end of this lesson)
- The Boston map from Boston Development lesson in this book (Chapter 5, Fig. 5.1) and from this lesson (attached)
- The book *Make Way For Ducklings*
- Any other supporting material about ducks, Boston, air photos, and satellite images

The Learning Activity:

Background:

This lesson is divided into five related sections and they follow in a logical order. The lesson plan begins by reading the book *Make Way For Ducklings* and discussing the book and what happens in it. Here students gain an understanding about ducks and their environmental needs for living (habitat). They also learn about the interactions between animals and humans. In the enrichment section the students can learn more about ducks and their needs. Next, the students are asked to imagine being the ducks as they search for a place to live in Boston. Here the satellite image and air photos are introduced and the students are asked to follow the story using these images. In this section they learn to interpret satellite images and air photos. They are also introduced to the *aerial perspective*. In the enrichment section students learn about land use mapping in the city. Next, we introduce a map and compare it to the air photos and we discuss what maps are and how to read the maps. We also compare maps to air photos and in an enrichment section we make our own maps as well as go to the Internet for further information. We then introduce the concept of scale, one of the most basic, yet more difficult concepts in geography. Here the students discuss the different things they see with different scales of air photos. The enrichment section allows the students to determine scale. Finally, the students are asked to search for other areas in Boston using the air photos and to come up with their own stories about the adventures of the Boston ducklings.

Part A: The Story Line

Read the story, *Make Way For Ducklings*. Depending on the size of the class, the grade level, and teaching style, the teacher could read the story to the whole class in one sitting, or the teacher could divide the class into various groups with each group reading the story. Regardless of the style of reading, the teacher should address the following discussion questions.

1. Why did the ducks end up coming to Boston?
2. How did they get there?
3. What are some of their concerns when raising a family?
4. What do ducks need when they are looking for a place to live?
5. List the different places where they looked for a place to live and describe the positive and negative aspects about each place.

6. What kinds of interactions took place between people and the ducks?
7. Have you ever interacted with ducks?
8. What are some of the *incompatible* activities between people in a city and ducks?
9. What did the ducks like about the city and what did they not like?
10. What do ducks have to do to raise their ducklings?
11. What did Mrs. Mallard teach her ducklings?
12. What difficulties did Mrs. Mallard and the ducklings have in going back to the Public Garden?
13. How did they get to the Public Garden?
14. Why do you think the ducks decided to stay in the Public Garden and not go back to the island in the Charles River?
15. Have you ever been to Boston and seen the Public Garden where the Mallard family ended up living?

This activity should lead to a variety of discussions, especially about the needs of ducks. Any additional material about ducks and ducklings would be useful. A variety of activities can stem from here.

Enrichment: The life of ducks

At this point you may want the students to do some more research about ducks. Some issues they might want to investigate are: what do ducks eat, who are their enemies (predators), where do they tend to live, when do they generally lay their eggs, and how do they raise their young? If possible you might want to do some specific research on Mallard ducks and on ducks in your area if they are different from Mallards.

Part B: Seeing Like A Duck

Now we will use the satellite image and associated air photos. The teacher can use this section with the whole class, or groups of children in the class. It would be nice to break the class into different groups and have them work with the air photos and later report back to the class as a whole. If you break into groups you can photocopy the images from this book. If you wish, you can enlarge any of the images.

1. *Satellite Image* (*See* Chapter 2, Fig. 2.1)

This is a satellite image of Boston and surroundings taken from the Landsat satellite some 700 km (434 miles) above the earth's surface. Green areas are vegetation, silver areas are urban and blue-to-black areas are water. Have the students look at this image and try to find Boston. If necessary, use an atlas to help locate Boston. If your school is in the Boston area, can you locate where you are? Have the students study the image. How many different kinds of things can they find, such as roads, airports, lakes, rivers, ocean, forests? Have the students create a route into Boston which the Mallards might have taken. Have the students find a few places along the way where Mr. Mallard might have suggested they stop. What environmental characteristics about these places might be good for ducks?

2. *Air Photo Number 1*

Have the students look at this *small scale* (i.e., you can see a large area but not with great detail) air photo of downtown Boston.

Ask them now to identify as many things as they can such as rivers, roads, bridges, piers, and stadiums. If you have a map of Boston, or an atlas with a Boston City map you might want to use that also. After they have examined the photos and identified a few things, have them identify the following specific areas:

a. The Charles River, which is the prominent river in the image.
b. The two bridges at the widest part of the Charles River. The one closest to the top of the image is the Longfellow Bridge and the other is the Massachusetts Avenue Bridge (also

known as the Harvard Bridge).

c. Piers along the Bay side of the city.
d. Have them locate the tall buildings in downtown Boston.
e. Find the Public Garden and the Boston Common (They are located between the tall buildings and the wide part of the river).
f. For the places they are able to identify in the air photo, can they also see them in the smaller scale satellite image? It is often difficult to do so. Why? (You cannot see as much detail in the satellite image as in Air Photo 1. The larger the scale, the greater the detail you can find, but you cannot see as much area.)

3. *Air Photo Number 2*

Once the students have finished reviewing air photo number 1, look at photo number 2 which is a *larger scale* photo (i.e., you can see more detail).

Now have the students locate themselves by finding the wide part of the river, the tall buildings, and the Public Garden and the Boston Common. The Public Gardens have a large pond in the middle and they are south of the Common in the photo.

a. How does air photo 2 differ from air photo 1?
b. Have the students pretend that they are the ducks and are flying around Boston.

- Why does the Public Garden look so good to a duck?
- In this photo are there any other potential places for a duck? Why? (In the lower right one can find the Fenway where there are trees, shrubs and grass as well as water. Near the bottom of the air photo you can see a baseball diamond and stadium. This is Fenway Park (Stadium) where the Red Sox play baseball.)
- Are there any potentially dangerous places for a duck? Why?

4. *Air Photo Number 3*

This is the largest scale photo. Now have the students locate the Public Gardens. Then ask them to:

- Find the pond in the Garden.
- Find the island in the pond where they think the ducks rested.
- Find the different paths that crisscross the Gardens. Ask the students to find the path on which they think the boy rode his bike quickly by the ducks. (May also lead to discussion of people and animals sharing the same space on earth).
- Find an island in the Charles River near the Longfellow Bridge where the ducks flew to in order to raise their young. What do the students think the white specks are near the island? (Sail boats) (Also note the bright white building near the islands. This is the Hatch Shell where the Boston Pops Orchestra gives concerts.)
- Why might this island be a good place for the Mallards to raise their young?
- Looking at the air photos, do the students think that this may be how ducks see Boston when they are flying? Have any of the students ever flown in an airplane before and looked out the window?

Enrichment: Land Cover of Boston

Here the students will create their own map from the air photos. Use Air photo #2, tracing paper, and colored pencils. With the tracing paper over the air photo have the students trace (delineate) the following land-cover classifications:

- Tall building areas;
- Small building areas;
- Open space, parks; and
- Transportation corridors (highways, main roads, bridges, do not need to mark off small roads).

The students can be as detailed or general as you or they want.

Use the colored pencils to create a legend for the different land-use classifications. Then color them on the maps.

Have the students compare their maps and explain why they classified their areas the way they did. What does this map tell us about the city of Boston?

Now use air photo # 3 (the largest scale photo) and do the same. Which air photo was easier to classify, #2 or #3? How is the map from air photo #3 different from that of air photo #2?

Part C: Maps

Make copies of the Boston map from the "Neighborhoods and Landfill in Boston, Chapter 12 in this book. (*See* also maps in Chapter 5) and the large-scale Boston map from this lesson. Ask the students the following questions:

- How does a map differ from an air photo? (Maps have words, symbols, colors or tonal changes, etc., whereas photos show the actual buildings, parks, etc.)
- How are they similar?

Now read the section on how Mrs. Mallard brings her ducklings back to the Public Garden.

Ask the students the following questions:

- Using air photo #3 how do you think the ducks got back to the Public Garden?
- Using the large scale Boston Map, can you find the street names and find the path that they did take? Remember to orient this map the same as the air photo.
- Now that you know the route, can you find it on air photo #3?
- Can you find the highway that they had to cross?
- Do you think that this would be difficult for ducks to cross?
- Try air photo #1 and see if you can find the route?
- Using air photo #3 and the Boston map, find a different route that the ducks could have taken to the park.

Enrichment: Making a Map

Cartographers or map makers often make maps from air photos. Using air photo #3 and tracing paper have the students make a road map of the streets and a path map of the paths in the park. Then use the Boston map to find out the street names, and the students can make up names for the paths in the park. How do the student maps compare with the Boston Map?

Using the Internet: Many programs on the Internet are available to create and to display maps. Go to Yahoo's mapping program (on the Yahoo! Home Page click on maps, or go to the address: http://maps.yahoo.com). Pull up a map of Boston in the Public Garden area by typing in the address: *100 Mount Vernon Street, Boston, MA.* You can then print the map. What are the differences between this map and the Boston map in the Lesson? What are the differences between this map and the maps that the students made? How is it different from the air photo? This illustrates that there are many ways to make maps!

Part D: Scale

Scale refers to the distance on a map (or air photo) to the real distance on the ground. It is often referred to as map distance-to-ground distance. For example, a map that has a scale of 1 inch equals one mile, means that one inch on the map represents one mile on the ground. In this way we can use maps to find distances. *Scale* is one of the key elements of maps, and one of the key concepts in geography. We can describe scale in three major ways: 1) word phrases such as "one inch represents one mile;" 2) bar graphs where a bar on the map shows distances such as 1 mile, 2 miles, etc., and you make a map measurement and then put that measurement next to the bar to see the ground distance; 3) representative fractions where a fraction depicts map distance-to-ground distance such as 1:10,000. This means that 1 inch on the map represents 10,000 inches on the ground. This is a very common map scale. It is called a unitless scale because you can use any unit, i.e., one inch represents 10,000 inches or 1 centimeter represents 10,000 centimeters.

Scale is also referred to as *large scale* and *small scale*, and is a relative term. That is, air photo #3 is a large-scale air photo in comparison to or *relative* to air photo #1. In large-scale photos things look large while in small-scale photos things look small. One advantage of a small scale photo is that although things look small, you can see a larger area of the Earth's surface than on a large-scale map. This is why in small-scale photos, or maps, we can see all of Boston whereas only the downtown can be seen on a large-scale map. The three air photos can be considered as follows: Air photo #1 is a small-scale photo whereas air photos #2 and 3 are larger-scale photos.

Which kind of scale is it?

Ask the students to look at the three different air photos and ask them to make a list of the differences between the three of them. Such things as: On which air photo is it easier to see buildings? On which is it easier to see more area...? In what cases would you use the different photos? When do you want a large scale photo and a small scale photo?

Measuring distances on a map?

The Boston Map in this lesson has a scale of (1:14,200). Using that map in this lesson, have the students use a ruler to measure the distance that Mrs. Mallard and her ducklings had to walk to get to the Public Garden's pond from their island in the Charles River. Here students learn about measuring with a ruler, as well as counting and adding. Once you have the total map distance, you multiply it by the scale and get the actual ground distance. For example, if the map distance is 20 cm, then we multiply 20 times 14,200=284,000 cm or 2,840 meters (100 cm=1 meter). You can do the same in the English system (i.e., 7.8" X 14,200= 110,760" or 9,230'). We prefer the metric system because it is so much easier to understand and use. Then have the students measure the distance directly from the island to the pond, as if a duck was to fly it. Which is shorter and why? Now you can measure the distance anywhere that you want to go in Boston.

Making your own air photos.

Gather some toy cars, or ducks, to make your own model city. Then get a Polaroid camera and a tape measure. Hold the camera 2 feet (0.61 meters) above your scene and take a picture. Then take a picture at 4 feet (1.22 meters) above, and then one at 8 feet (2.44 meters) above. How does the scene (ducks, cars, etc.) change as you take photographs higher and higher above the scene? Which are large scale photos and which are small scale? How does the scene change?

Enrichment: Finding scale.

If you know the ground distance of anything on the map or on the air photo, you can find the scale of the map or photo by measuring it on the map or photo. For example, the Longfellow Bridge is approximately 470 meters (1,520 feet or 0.29 mile) long (from shoreline to shoreline) and the Massachusetts Avenue Bridge is approximately 575 meters (1870 feet or 0.35 mile) long (from shoreline to shoreline). Knowing this, measure the distance of both bridges on the Lesson map (Longfellow: 3.3 cm or 1 1/4 of an inch). (If the map you are using has been photocopied, the distances may have been altered.) This means that the scale of this map is: 3.3 cm to 470 meters. We now need to make the first number equal to one. We do this by dividing it by itself and 470 by 3.3. So, one centimeter equals 142 meters is the scale, or if we convert meters to centimeters (there are 100 centimeters in one meter: 142 times 100 = 14,200) so the scale is also 1:14;200. Now find the scale of the three air photos.

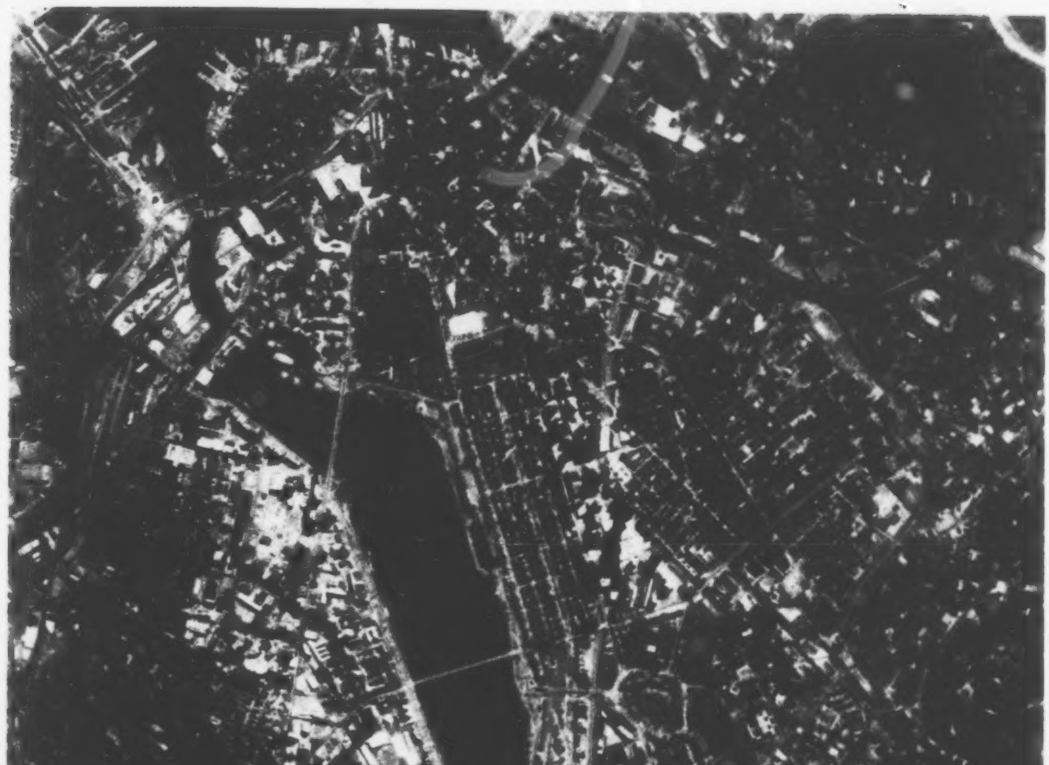
Part E: Story Time

Using the three air photos and the two maps of Boston, have each group come up with a story about some adventures which the ducklings might have experienced while they were growing up in the Public Gardens.

Additional Resources

1. *Make Way For Ducklings: A Bird's-Eye of Boston*: Web Page (text and images on-line). Go to Professor Stephen Young's page on The Salem State College Department of Geography Home Page. (http://dgl.salem.mass.edu/
2. You can download air photos of the Boston Area: (http://ortho.mit.edu/nsdi/)
3. You can purchase air photos of anywhere in the U. S. from the National Aerial Photography Program: (http: //edcwww.cr.usgs.gov.eros—home.html)
4. Satellite and air photo images of the world:
   (http://spaceimaging.com or http://terraserver.microsoft.com) or
5. Fun sites to look at:
   http://www.nasa.gov/gallery/photo/index.html or http://earth.jsc.nasa.gov or
6. A list of Remote Sensing (satellite and air photo) sites on Professor Young's home page: (http://dgl.salem.mass.edu)
7. Comments about and improvements for: "Make Way For Ducklings: A Bird's Eye View of Boston.": syoung@dgl.salem.mass.edu

Air Photo #1



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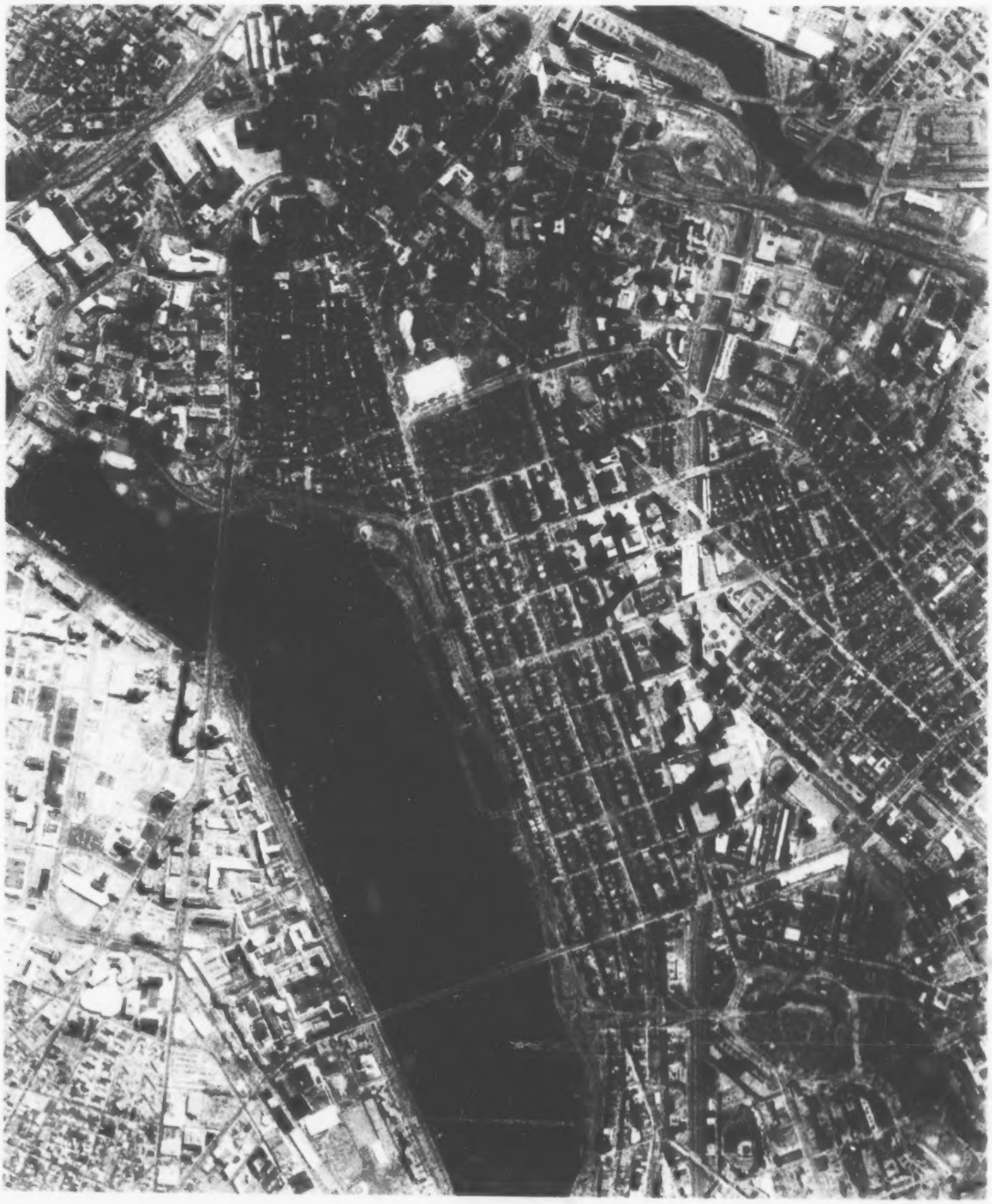
Air Photo #2



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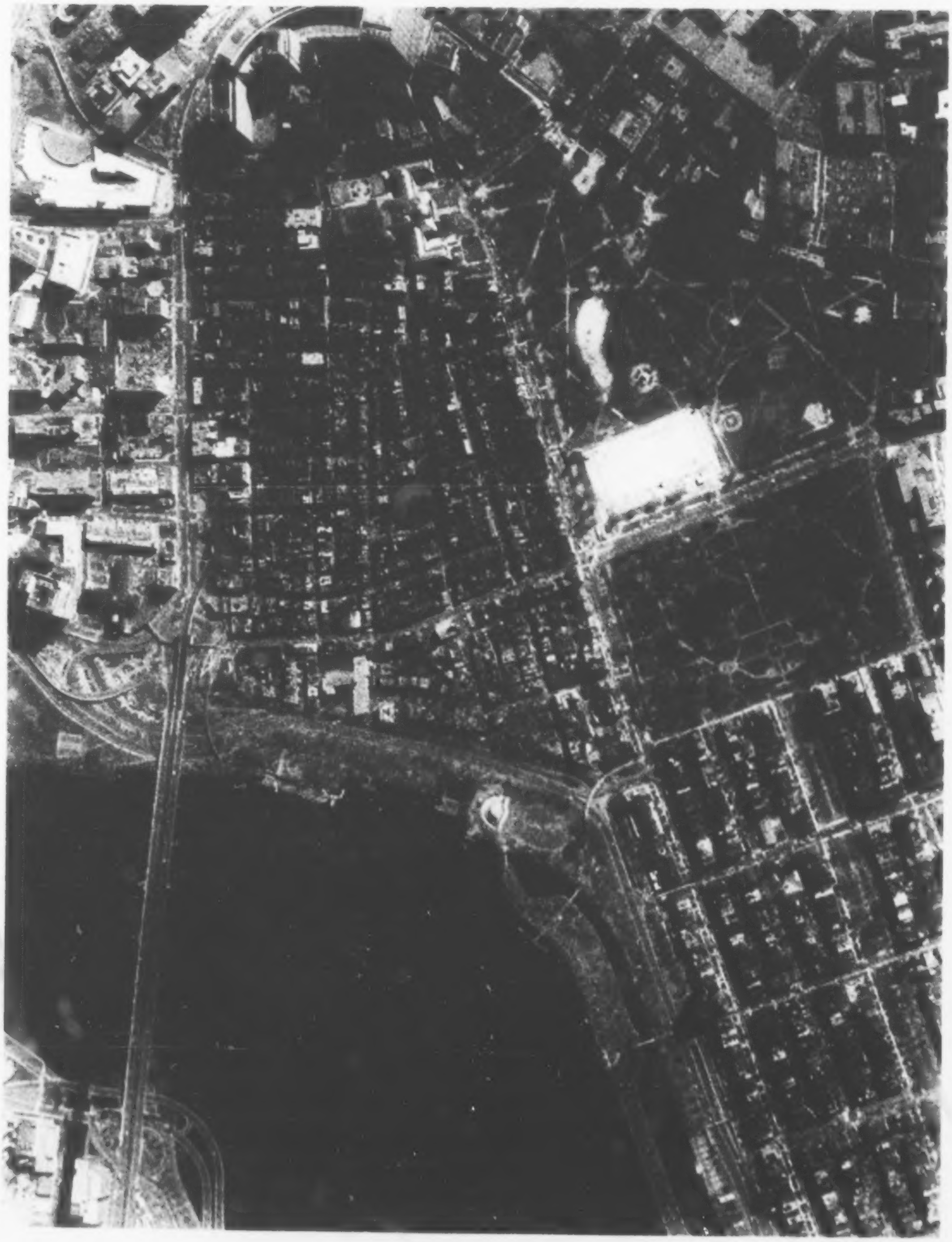
Air Photo #3



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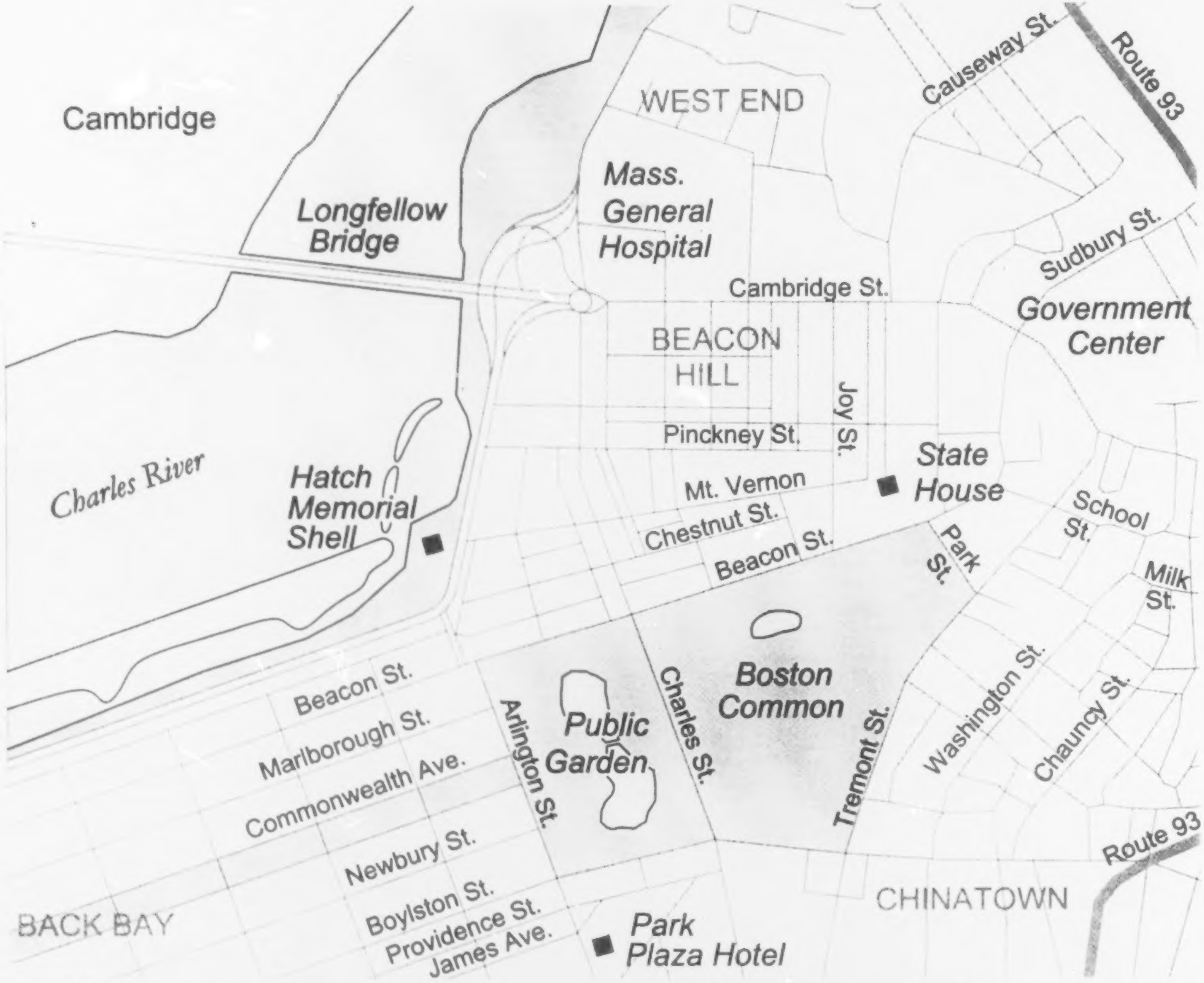
Boston Public Garden and Vicinity


Cambridge
Longfellow Bridge
WEST END
Mass. General Hospital
Causeway St.
Route 93
Sudbury St.
Cambridge St.
Government Center
BEACON HILL
Joy St.
Pinckney St.
State House
Mt. Vernon
Chestnut St.
Beacon St.
Park St.
School St.
Milk St.
Charles River
Hatch Memorial Shell
Boston Common
Beacon St.
Marlborough St.
Commonwealth Ave.
Arlington St.
Public Garden
Charles St.
Tremont St.
Washington St.
Chauncy St.
Newbury St.
Boylston St.
Providence St.
James Ave.
Park Plaza Hotel
BACK BAY
CHINATOWN
Route 93

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11

LOCATING, MAPPING, AND EXPLAINING VERNACULAR REGIONAL NAMES (ACTIVITY)

John E. Harmon

Introduction

The academic literature on toponymy (the study of place names) has mostly a historic focus and concentrates principally on the official names of places as recorded in historic documents and maps. An entire category of place names studied not as carefully is how students looking into local situations could make a significant contribution to the understanding of place and how names are applied to places.

In geography we call these places "vernacular culture regions." One widely used text defines them as "the product of the spatial perception of the population at large. Rather than being a formal region based on carefully chosen criteria, a vernacular region is a composite of the mental maps of the people (Jordan-Bychov and Domosh 1999: 305)."

This activity includes three parts and although they are related, they are independent of each other so you should attempt to do at least one that works in your community.

Student Levels: 9-12

Objectives:

To locate named regions at several scales (regional, sub-regional, and community) and to identify and map the images attached to these names.

Relationship to National Geography Standards:*

These activities relate primarily to Geography Standard 2, The World in Spatial Terms, and to the notion of mental maps. The focus is more on the image content and real-world locations of named vernacular regions than on students' abilities to retrieve and draw the mental maps.

**Geography for Life: National Geography Standards* 1994. Washington, D. C.: National Geographic Research and Exploration for the American Geographical Society, Association of American Geographers, National Council for Geographic Education, and the National Geographic Society.

Materials:

Three maps are attached to this activity: "Where is the Core of New England," "Data Compilation Map, Core of New England," and "New England Core—Telephone Books."

Procedures:

Activity 1: Understanding and Mapping Vernacular New England

In this activity students will:

- Uncover the components of the images that people have of New England
- Map the approximate extent of the core of the region.

New England itself could be considered a vernacular culture region. When outsiders hear that someone is from that region, images of the frugal Yankee farmer, the Currier and Ives-generated white-steepled church on the village green and other associations with the name are almost automatic, even if quite outdated. "New England," as a name, does not bring up images of the textile mills of Fall River, Massachusetts, the high-tech factories of Rte. 128 around Boston, or the suburban landscape of the cities of the region, even though these elements are real. Instead, this once true but now largely *relict* (something left unchanged in the process of change) landscape is what, comes to people's minds and what they expect to find in the region.

Activity 1A: Regional Identity

What does the name "New England" bring into your mind? Have the students each ask 5 of their friends and 5 adults that question and write down the first 5 things the people say. Classify and compile those results, find pictorial images that correspond to the answers given and post on a bulletin board from the most common associations to the least common ones mentioned by at least 5 people.

Do the responses from the adults differ from those of children? What is the role of experience in these composite images?

Activity 1B: Mapping Vernacular New England

Since the spatial extent of the region is so well known and accepted (the states of Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire, and Maine) having people identify the region on a map is not a very useful exercise. Having people try to identify what they think is the *core* and the *periphery* of the region is a more interesting task. It introduces the concept that regions are not always homogenous—they have parts of them where the identity is more intense and places where it is less so.

After writing down clearly the answers to the first question, present the interviewees with the map "Where is the *Core* of New England" and ask them to "outline the area that you think represents the core, or most representative part, of New England."

Compiling the large number of maps you will have from this part of the activity is difficult but if well organized it shows how a group of people asking a relatively simple question can have the answers compiled into a map of some interest. Details on how to compile the data are at the end of the lesson plan.

Activity 2: What Named Vernacular Region do We Live In?

Vernacular regions vary tremendously in size. In North America, some cover significant portions of the national territory and considerable research is available on their extent and their meaning to people, e.g., "The Midwest." A significant number of vernacular regions are metropolitan or regional in scale. A good example is The Metroplex, the name given to identify what was originally called Dallas-Forth Worth, Texas. Hundreds of businesses and organizations in that part of Texas now use this unwieldy and artificial name. Now other "Metropolexes" in Texas and the Plains States have been identified.

Within New England many smaller vernacular regions exist. The objectives of the second task are to identify the region your community is in and to investigate what the name signifies and how it came to be applied to your region of New England. Not all of New England clearly falls into a vernacular sub-region like this but much of the region does. Figure 4.3, "Selected Vernacular Regions of New England," in Chapter 4, of this book contains some of these sub-regions but your work may uncover more.

Many of these names derive from physical features, e.g., a river valley or a mountain peak, but the name does not refer to the physical features themselves but rather to the communities found there. Also, the name often carries an image or perception of the kind of people and communities that are found there. Not all river valleys or mountain peaks, however, are attached to a vernacular sub-region. For example, in Connecticut (which I know better than the other states) the phrase "The Valley" refers specifically to a small set of communities in the lower Housatonic and Naugatuck River valleys and not to any other *valley* in the state. The "Farmington Valley" is not only a physical feature but the name given to a set of suburban and exurban communities west of Hartford and carries a connotation of up-scale suburban living. "The Connecticut Valley" refers only to the physical feature and there is no connotation attached to the communities along the river in the state.

The easiest way to find these named vernacular sub-regions is to use the telephone directory. Many businesses will seek to identify their market area by using the vernacular name of the region. Divide the Yellow Pages of the most recent telephone directory into sections for each student and have them identify the use of the vernacular regional names in the assigned section. Ignore businesses named for an official community, e.g., the town name, the state, New England, United States, America(n); the purpose is to locate vernacular regions that are larger than a single community. Occasionally you will come across organizations named for a county of the region. In some cases these names carry more than a simple locational significance and have some social meaning attached. In Connecticut, to say some organization is in Fairfield County carries a connotation of high status and higher income whereas the same statement about Tolland County carries no such connotation. Your knowledge of the area will have to determine whether these are true vernacular names.

Pages 190-199 of the 1994-95 Yellow Pages for New Britain, Connecticut produced the following businesses named for a vernacular sub-region:

Northeast Lightning Protection Systems, Inc.
Midconn Bank
Farmington Valley Lock
Central Connecticut Counseling Services
Northwest Connecticut Counseling Services

You can compile these lists and identify regions that appear more frequently than others. You can then use one or more of those regional names to ask the same question about regional identity as you did with New England: "What does the regional name ______ bring into your mind?" Have each student ask five other students and five adults their age. Then write down the first five regions or places they say. Compile the answers to determine the image produced by the name. Do differences exist between the lesser (younger) and the more experienced (older) groups?

If the resources are available, a final task you might wish to undertake would be to examine back issues of city directories to find out when people began to use particular names for places. City directories are used mostly by businesses to find people and other businesses and libraries will sometimes keep back editions. Since they are arranged like telephone directories you can examine back issues for the first mentions of the regional names. Telephone companies are highly security conscious and my attempts to obtain back issues of telephone books have not been successful.

Activity 3: The Unnamed Neighborhoods of Our Community

Although it is not our custom to name individual buildings except some large office and industrial structures and the occasional summer home, we often give names to parts of our communities that the residents may formally acknowledge or use informally. Some towns and cities have officially named neighborhoods that appear on post offices, libraries, businesses, and in the names of local organizations. In other cases people give these districts or neighborhoods informal names, but they do not appear anywhere on the landscape and people commonly use them to refer to the area. Since these names often do not appear on official lists of named places little research is available on their distribution, origins, and use.

Begin this activity with a map of your community and ask students to list any neighborhood or district names of which they are aware and have each student outline them on the map where they think those neighborhoods are. Sometimes neighborhoods will be attached to the names of schools and you will decide whether these places are true neighborhoods. I would not include them in most cases. A list of the named neighborhoods with which I am familiar in West Hartford, Connecticut follows.

The South End — the lower income, more working class area of the community.

Elmwood — a post office, branch library, and community center carry this name. It sometimes refers to the entire "South End" but often just to the main business district of that neighborhood.

Hollywood — a small neighborhood isolated in one corner of the town. One street is named Hollywood and it gives its name to the small area.

The Reservation — many of the streets carry Amerindian names. It is also a heavily Jewish neighborhood. Sometimes it is referred to as The North End but that has a different meaning in adjacent Hartford (an African-American neighborhood). This is strictly an informal name.

Astronaut Village — a subdivision where the streets are named for the Apollo Seven astronauts.

West of Mountain Road — a neighborhood of large homes on large lots occupied by wealthy families.

Buena Vista — the largest property-owners association in town. Has its own street signs and some local control.

These neighborhood names will sometimes refer to former agricultural or industrial communities within the town that had some earlier identity, but were never separate politically. They will also often carry the use of the compass directions (a traditional New England naming convention) into the urban areas. The larger cities particularly have North, South, East and West Ends. This use of *End* to refer to a portion of a city is an old New England practice transplanted from England that is not common outside the region.

If you wish, you can carry out the same exercise of determining the type of social and economic characteristics (if any) people attach to these named places.

Compiling the New England Maps

1. Using a highlighter, put a copy of the map with the grid cells over each outline map and highlight each cell covered by the outline of the core as identified by that individual.
2. Prepare a summary sheet for each student that has each grid cell covered by the six New

Student: ____________

ROW	COL	MAP 1	MAP 2	MAP 3	MAP 4	MAP 5	TOTAL
1	1						
1	2						
1	3						
2	1						
2	2						
2	3						
2	4						
2	5						

England states. The first few rows of this compilation sheet would look like this. The student would put an X in each grid cell covered by that map and derive totals for them.

You can download this table as a web document from:

http//www.geography.ccsu.edu/harmonj/ne_place_name/compile.htm

Bring it into a web browser and save the file. A text version of this file (complile.prn) and the MS Excel spreadsheet (compile.xls) can be accessed using File Transfer Protocol (ftp) from the following location:

ftp://strabo.ccsu.ctstateu.edu/pub/ne_place_name/

Each student's total column can be added to the rest of the students. Teachers might consider doing this in a spreadsheet format if possible.

3. To prepare the final core-periphery map, identify those grid cells that were identified as being in the core of New England by 80 percent or more of the respondents.

Extensions

My experience with having people identify regional cores using this process is that they have a tendency to circle areas in the middle of the map even if they really might not think it is the true historical core. What you find in that case is the core of the piece of paper, perhaps not the perceptual core of the region. So you might want to have half the students use maps with some of the major cities identified, e.g., Boston, New Haven, Springfield, Burlington. You could use this as an opportunity for students to predict the differences between the regions identified with the two different maps.

After compiling the students' maps, it is likely that the core region identified will be rather small. You could then compare the maps drawn with this outlining methodology with the map labeled "New England Core - Telephone Books." This map, compiled in the mid-1980s, and the area outlined identifies those telephone books where the name "New England" was used more frequently than "American" in business names. This is another way to estimate the intensity of identity with a named region and will produce a different map. These comparisons can produce a discussion of how research methodologies affect results.

Evaluation

Suggestions for evaluating content—take-home or in-class writing assignments:

Activity 1: Core and Periphery of New England

The maps we developed showing the core-periphery structure of New England looked different from the map produced using telephone directories and named businesses. Which approach do you think was better and why?

Activity 2: Vernacular Regions within New England

If you were a member of a group charged with finding or creating a vernacular regional name for your region and publicizing its use, how might you go about doing this?

Activity 3: Named Neighborhoods and Districts within the Community

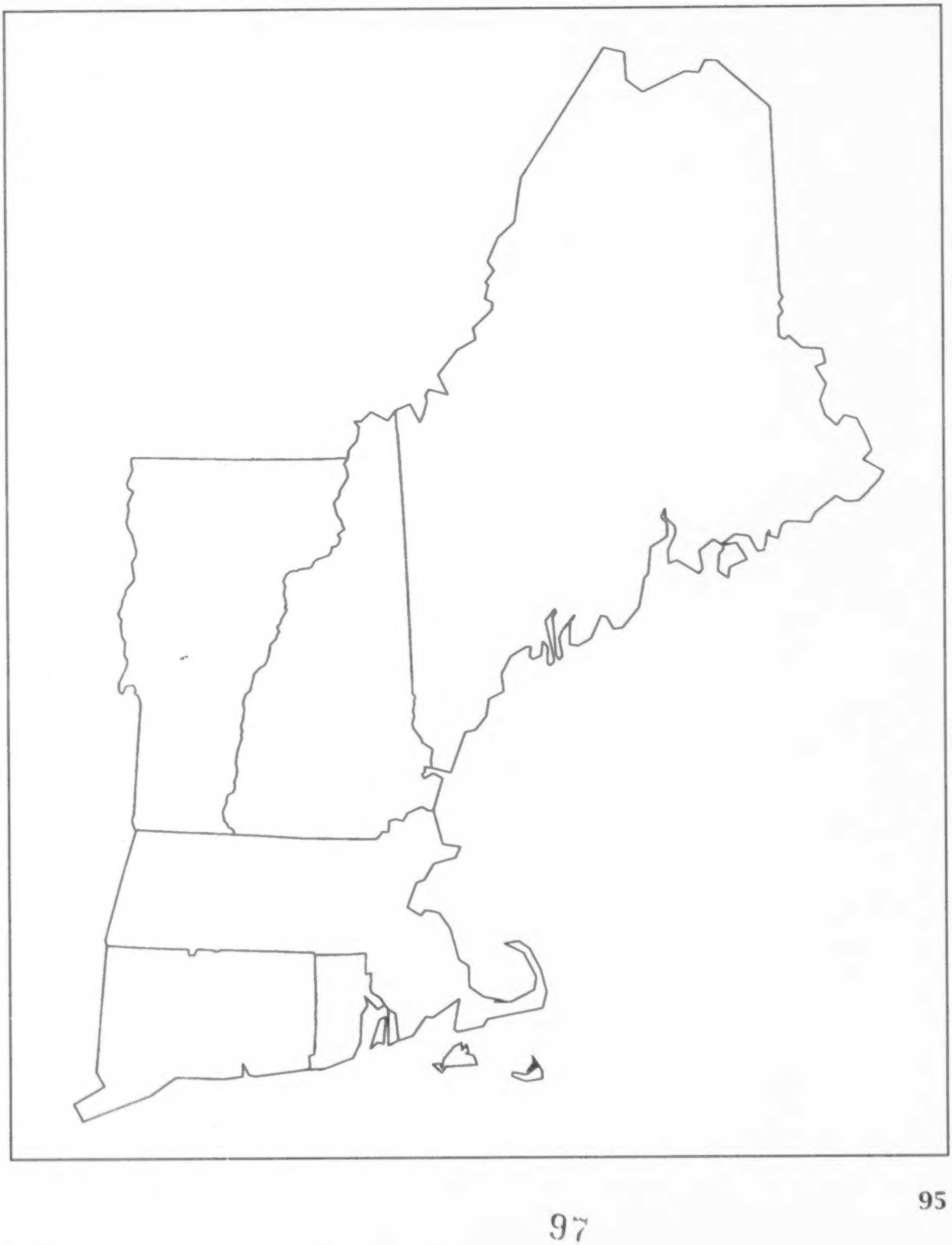
Some of the named neighborhoods in the community we examined carry positive and negative connotations and images for decision makers, politicians, and residents. If you lived in a neighborhood of which people had negative images, what could you do to counter those images?

Sources:

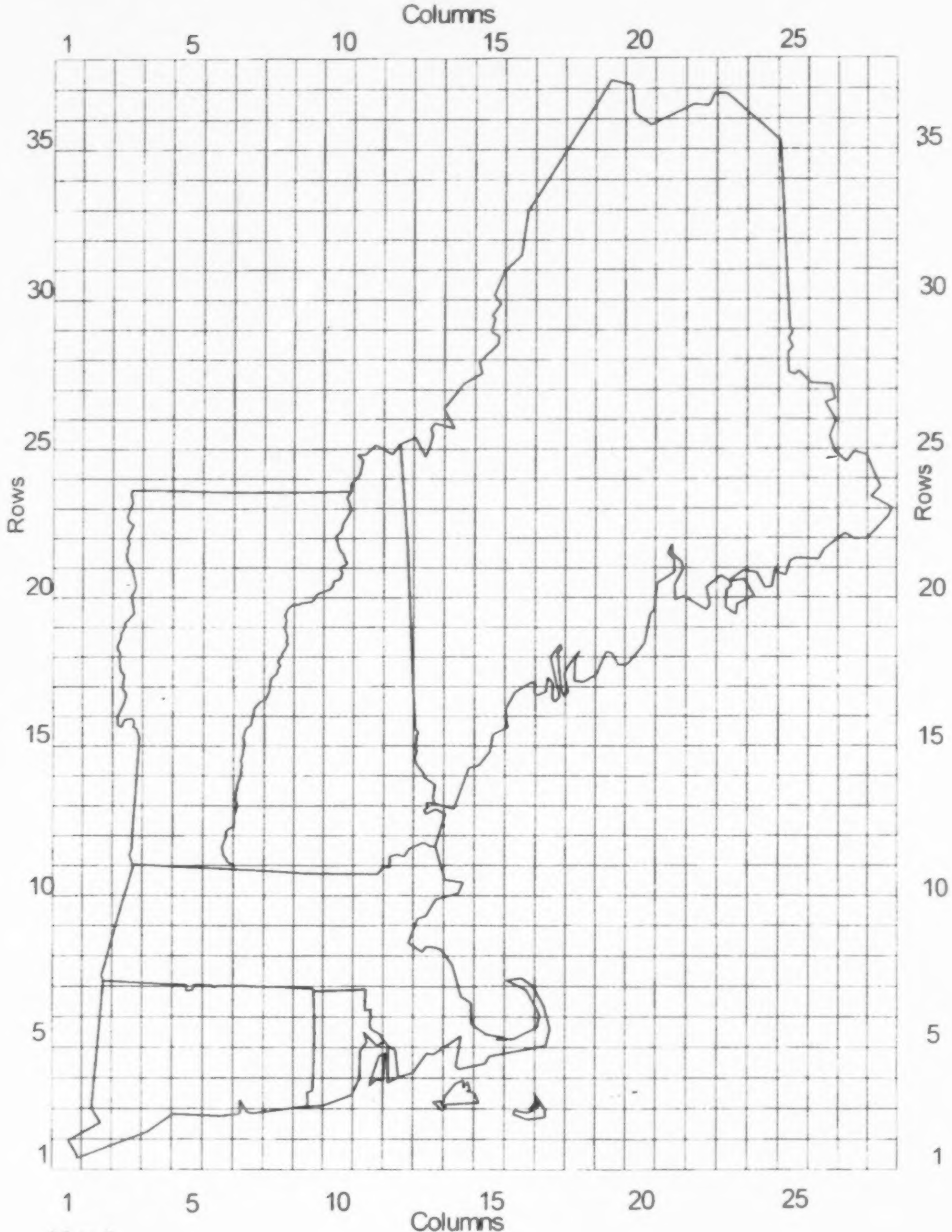
Harmon, John. 1984. "New England as a Vernacular Culture Region," *Proceedings of the New England-St. Lawrence Valley Geographical Society*. 14: 37-45.

Jordan-Bychkov, Terry G. and Mona Domosh. 1999. *The Human Mosaic—A Thematic Introduction to Cultural Geography*. New York: Longman.

Where is the *Core* of New England?
(Please outline the area.)



Data Compilation Map — Core of New England


Columns
1
5
10
15
20
25
Rows
35
30
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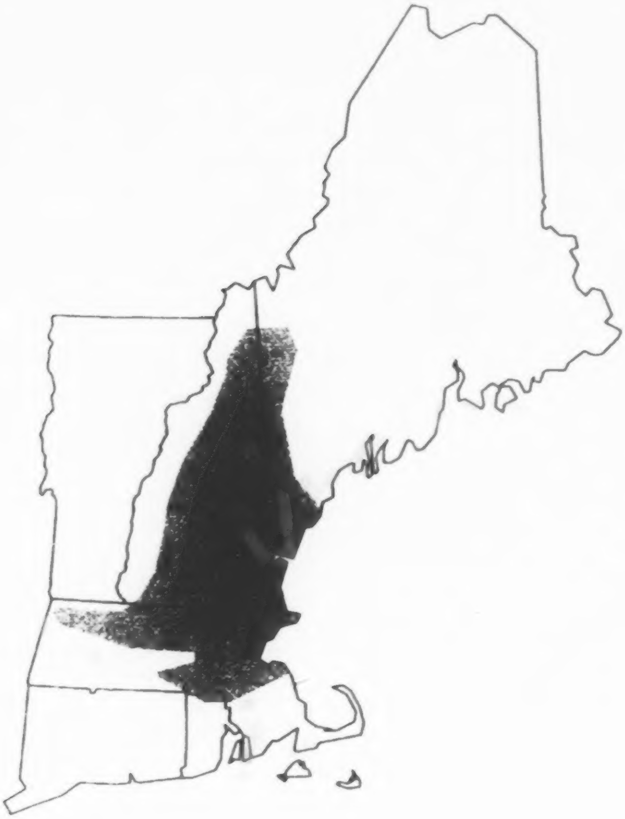
Columns

Map # ____________________

Student ____________________

New England Core — Telephone Books



12

NEIGHBORHOODS AND LANDFILL IN BOSTON (ACTIVITY)

Theodore S. Pikora

Introduction:

This lesson illustrates the growth of Boston from its site on the relatively small Shawmut Peninsula to a large city with many neighborhoods. It examines the role that landfill played in creating the space necessary for urban expansion. Chapter 5: "Neighborhoods in the Walking City of Boston," by Janet Duncan in this book can provide a good source of pertinent information to complete the lesson successfully.

Grade Level: 7-9

Time Required: 5 -7 days

Themes/Key Ideas:

Relative location, human interaction with the environment, organization of space, human use of land, interaction between regions (neighborhoods), movement in space, sense of place.*

**Geography for Life: National Geography Standards* 1994. Washington, D. C.: National Geographic Research and Exploration for the American Geographical Society, Association of American Geographers, National Council for Geographic Education, and the National Geographic Society. *See* Chapter 3, "Geographic Skills," and Chapter 4 "Standards"—1, 2, 3, 5, 6, 10, 12, 14, 17.)

Vocabulary:

Absolute and relative location, site, neighborhood, region, interaction, ethnic neighborhoods, social class, pedestrian city.

Objectives:

As a result of this lesson, students will understand:

- Cultural interpretations and patterns of economic change through time;
- How human cultures interact with and use their environment;
- Approaches used to identify spatial patterns;
- The value of land as it influences land use; and
- The development of neighborhoods.

Skills:

As a result of this lesson, students should develop skills in:

- Areal comparison;
- Acquiring and interpreting information from historic maps;
- Data classification and comparison;
- Preparing outlines and reports that accompany maps; and
- Critical thinking regarding alternative scenarios of development.

Materials:

- Paper, rulers, and pencils;
- Four historical maps and one modern map of Boston (included in this learning activity): "Boston: Evolution of the Harbor Shoreline," "Boston 1640s," "Boston 1775," "Boston 1814," and "Boston 1887," "Modern Map 1998."
- *See* Chapter 5 by Janet Duncan in this book on Boston's neighborhoods.

The Learning Activity:

Background: The lesson is based on examining a series of maps depicting the evolution of Boston's shoreline and overall street pattern from its first European settlement to modern times. Ask students to explain the way in which the transformations along the shore and in the internal development of the city influenced its social, economic and physical character.

Introduction: An early map (1640) shows the small Shawmut Peninsula, nestled in the inner part of Boston Harbor. It was a good location for a colony with fresh water, deep-water coves on the eastern side, offshore islands to shield it from storms, and a narrow isthmus offering protection from the west. As the city grew, extensive wharves for the colonial economy of trade are evident by 1775, and the street network of the pedestrian city is apparent. By 1814, the city's businesses and population are growing as part of the young republic's emerging trade and industrial economies. The commercial waterfront is expanded and new land must be found for housing. Mill Pond is filled in (1775 map), Beacon Hill (*see* Fig. 5.3) is developed for the wealthy class, and the North End is the home of many new immigrants. The map of 1887 portrays more landfill around the commercial waterfronts as well as the expansive Back Bay project, designed in a grid pattern as an upper class residential neighborhood of architectural grandeur. The more prominent additions to the city on a modern map are an increase in land between the docks of the waterfront, the filling in of South Bay, and automobile access route of Storrow Drive with the adjacent Esplanade river front park in Back Bay. Good sources of information for this physical evolution and neighborhood development are (1) Janet Duncan's Chapter 5 in this book and (2) *Boston: A Topographical History* by Walter Muir Whitehill, Cambridge, Mass.: Harvard University Press, 1968.

Executing the Activity: Divide the class into teams of 4-5 students, depending on class size. The teacher may assign Chapter 5, in this book by Janet Duncan as an information source or allow students to attempt an explanation of the maps using the existing information about the historical eras under discussion. Students should examine each of the maps and answer the following questions.

A. Map 1 (Boston—1640s):
   1. What were the advantages of the site and location of Boston for a colony in the seventeenth century? (fresh water, protection, harbor, hinterland access, fishing grounds, and nearness to maritime trade routes)
   2. Disadvantages of the site and location? (room for expansion, land for small gardens products and animal pastures)
   3. Describe the logic of the street pattern. (a road that bisects the peninsula with others leading to the waterfront)

B. Map 2 (Boston—1775):
   1. Describe how the city has expanded in commercial activities? Where is the commercial center? (many new docks extending into the water on the eastern shore, near to the hub of the street pattern)
   2. Where did people live in the city? (North End, etc.)
   3. How did they get to work or other activities? (life in the *pedestrian city*)
   4. What part of the peninsula has the least development and why? (near Back Bay with shallow tidal waters and smell, away from the port, less value, a good site for common lands and Boston Common)

C. Map 3 (Boston—1814):
   1. Where is the largest piece of new land in the city? (Mill Pond and along the commercial waterfront)
   2. How have street patterns, neighborhoods, and other features changed or remained the same? (Beacon Hill is built for the wealthy classes, grid street patterns in landfill areas, large buildings for warehousing and commercial activities in the harbor area)

D. Map 4 (Boston—1887):
   1. Where are the most obvious areas of new landfill? (Back Bay, east of Washington Street

in South Bay, around Long Wharf, and toward Charlestown)

2. Describe the street pattern in the new residential neighborhoods of Back Bay and in South Bay. (grid pattern with wide boulevards such as Commonwealth Avenue)
3. What is the relationship between the railroad, rail stations, and the new emerging central business district? (brought passengers from and to the edge of a downtown that was still pedestrian)

E.. Map 5—Boston 1998

1. What are the major changes in the street pattern? (automobile routes such as the Interstates and Storrow Drive)
2. Where are they located and why? (Near the waterfront and along rivers because of the linear patterns that provide for access in and out of the city)
3. Sketch the old Shawmut Peninsula on the modern map of Boston using significant landmarks. Features common to all of the maps in the series include the Boston Common, Washington Street bisecting the peninsula (Fig. 5.2), Hanover Street and related streets in the North End, and the location of Long Wharf. Approximately what percent of the area of downtown Boston is land fill? (approximately two thirds)

Concluding the Activity:

Each team should organize and write an outline of explanation for the five maps. The content should be based on answers to the questions, and it should emphasize three themes:

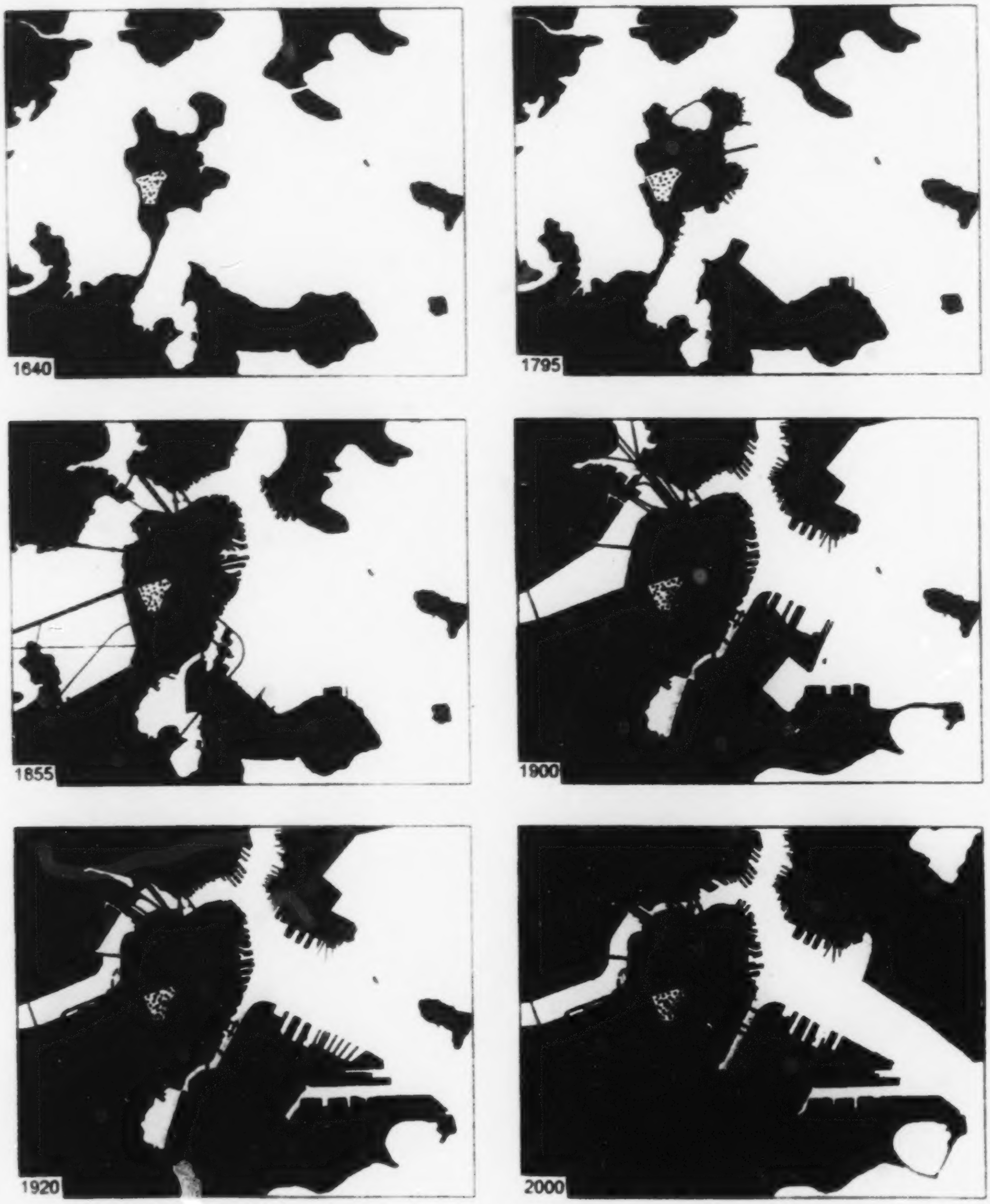
- When, where, and why did increases occur in the land area of the city?
- What patterns and neighborhoods remained the same through time?
- What patterns and neighborhoods changed through time?

The teams should present their results, followed by a discussion or a debate focused on the similarities and differences in the team scenarios.

Evaluating the Activity:

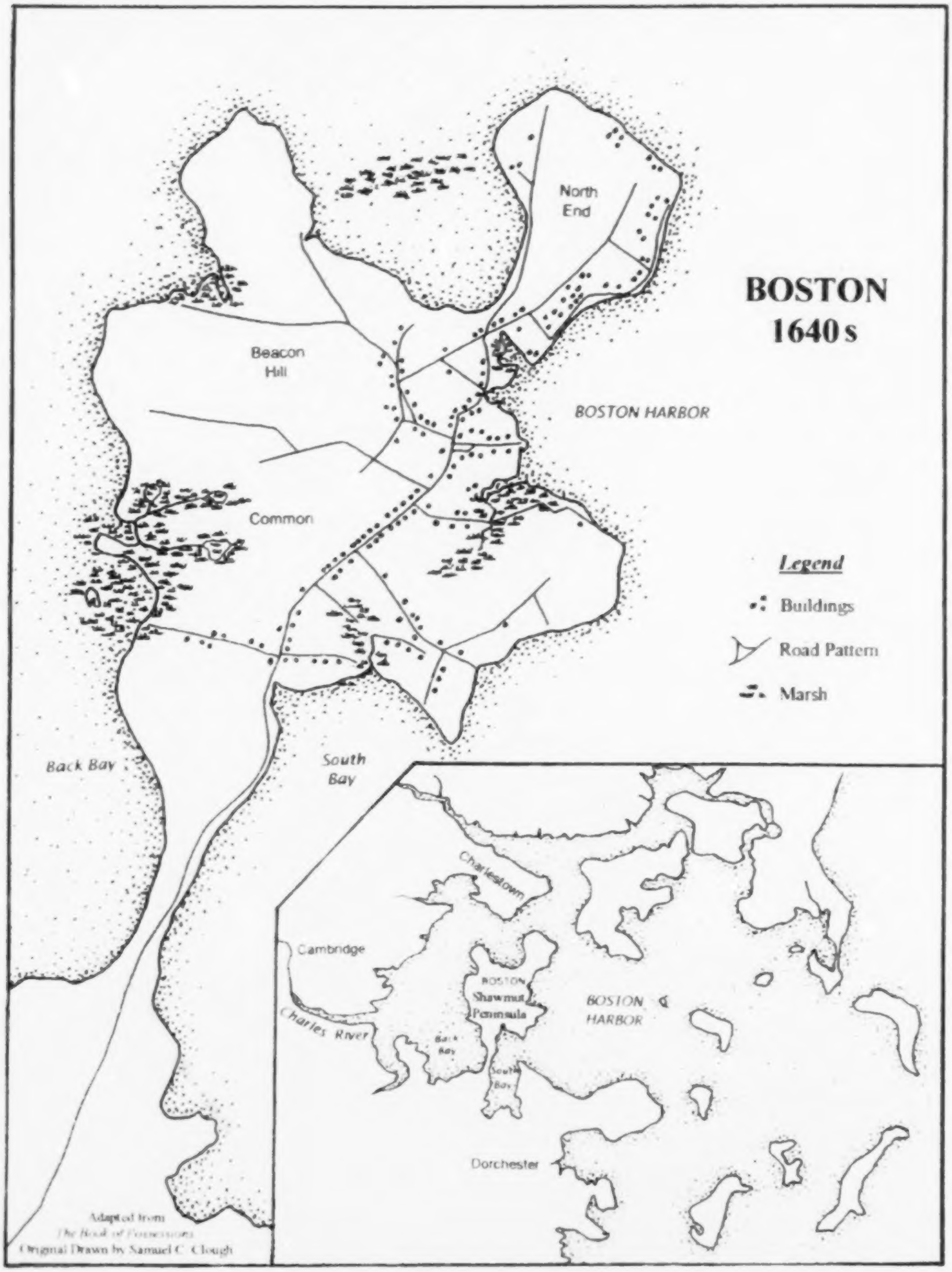
The teacher can evaluate outlines and presentations. Students can critique the activity and other team results using suggestions for elaboration and improvement.

BOSTON: EVOLUTION OF THE HARBOR SHORELINE

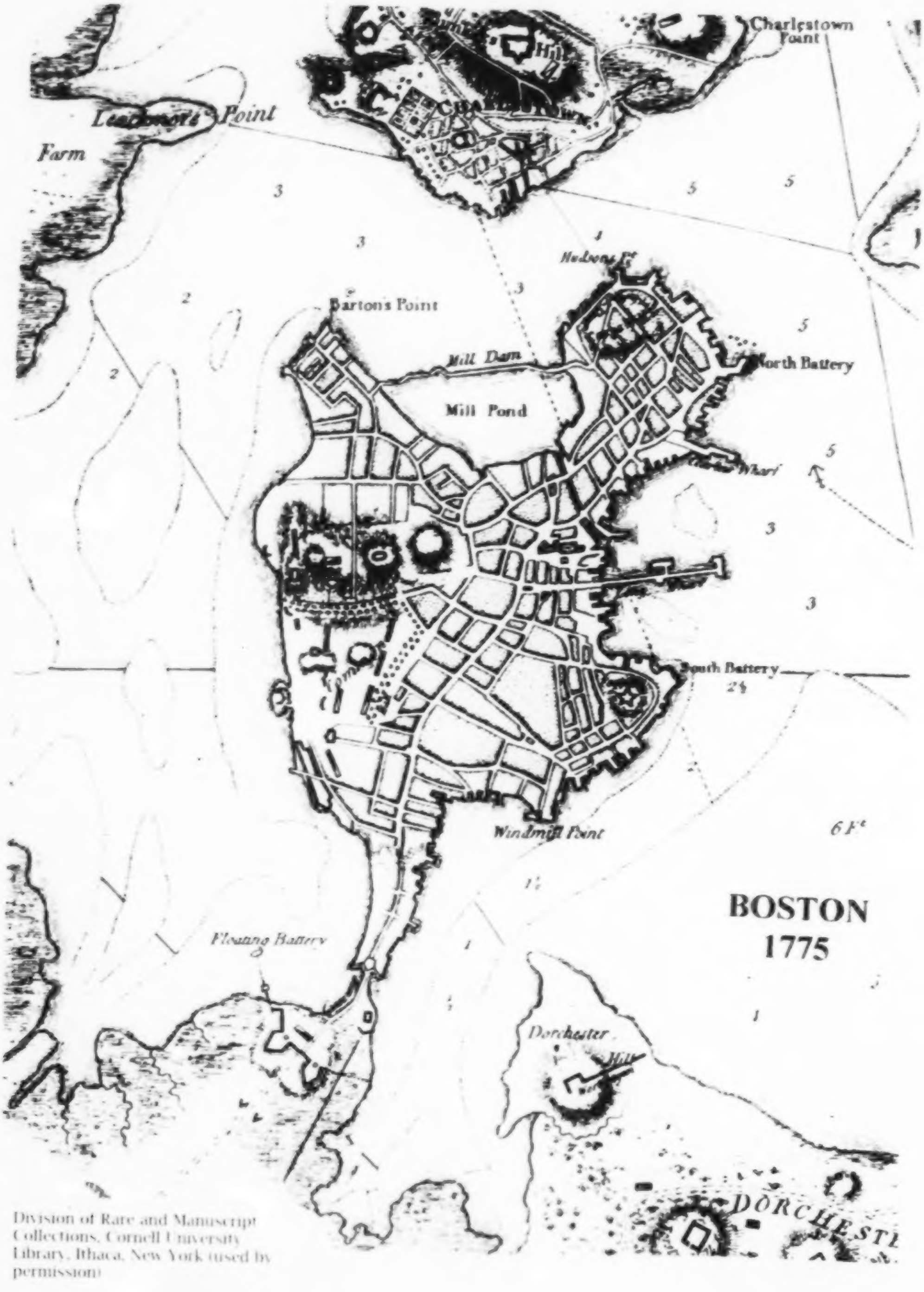

1640
1795
1855
1900
1920
2000

From Graphic Produced by
The Boston Redevelopment Authority

Boston Common


BOSTON
1640s
North End
Beacon Hill
BOSTON HARBOR
Common
Back Bay
South Bay
Legend
•: Buildings
Road Pattern
Marsh
Charlestown
Cambridge
Charles River
BOSTON
Shawmut Peninsula
Back Bay
South Bay
BOSTON HARBOR
Dorchester

Adapted from
The Book of Possessions
Original Drawn by Samuel C. Clough


Charlestown Point
Lechmere's Point
Farm
Hudsons Pt
Barton's Point
Mill Dam
Mill Pond
North Battery
South Battery
Windmill Point
6 Ft
BOSTON
1775
Floating Battery
Dorchester Hill
DORCHESTE

Division of Rare and Manuscript Collections, Cornell University Library, Ithaca, New York (used by permission)

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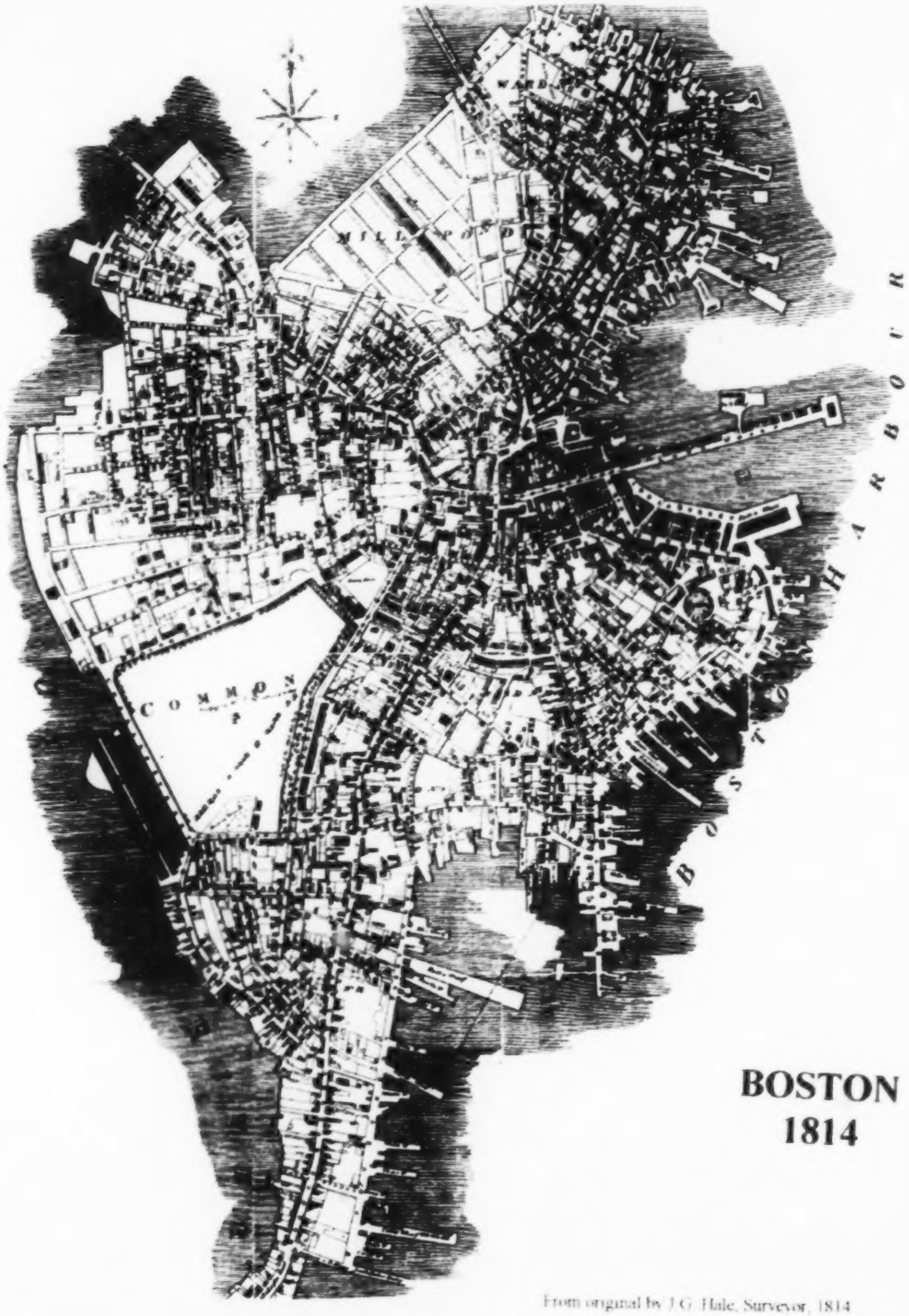
MILL POND
COMMON
BOSTON HARBOUR

BOSTON
1814

From original by J.G. Hale, Surveyor, 1814

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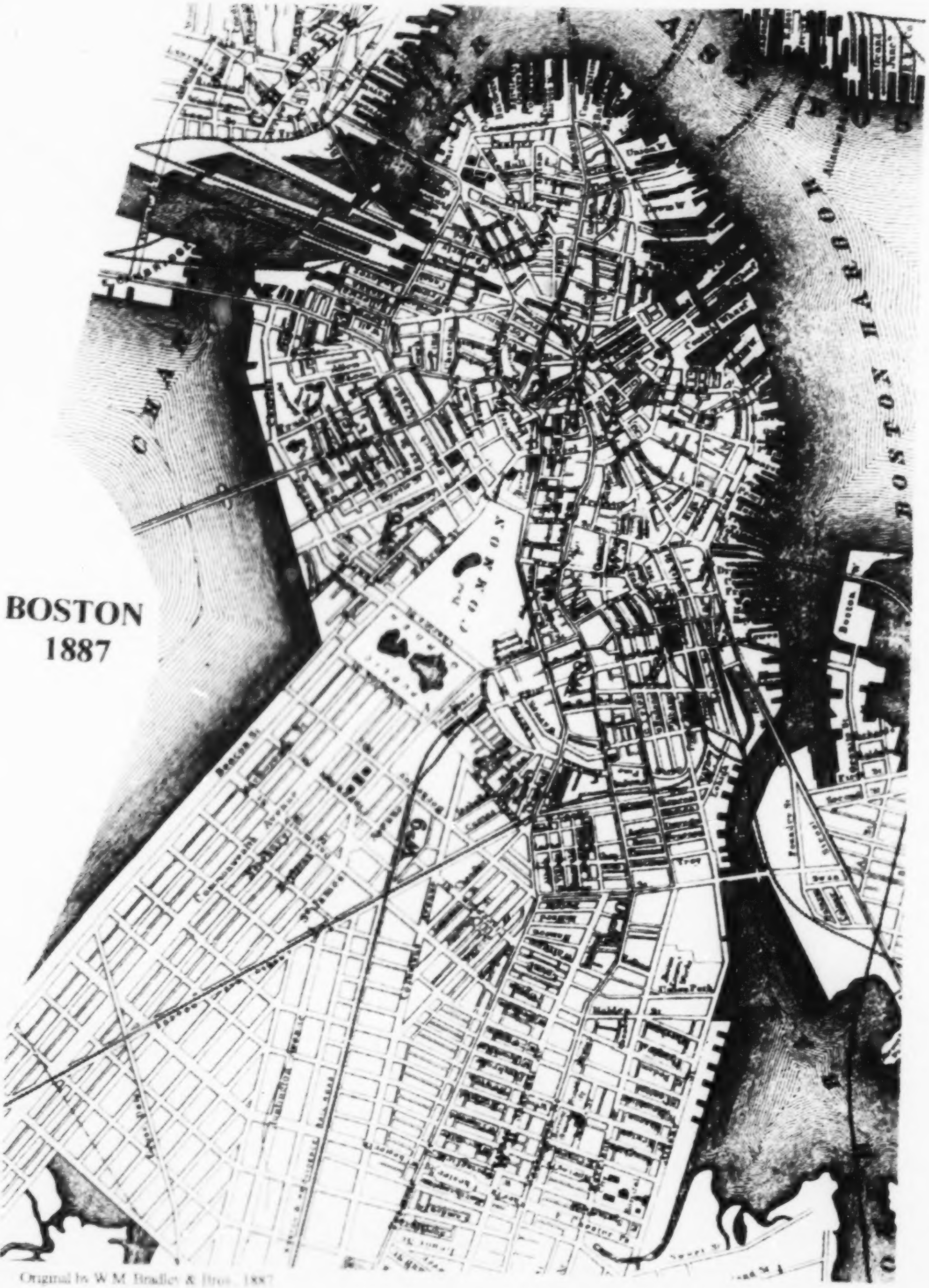
BOSTON 1887


CHARLES
BOSTON HARBOR
COMMON
Beacon St.
Commonwealth Avenue
Boston

Original by W.M. Bradley & Bros., 1887

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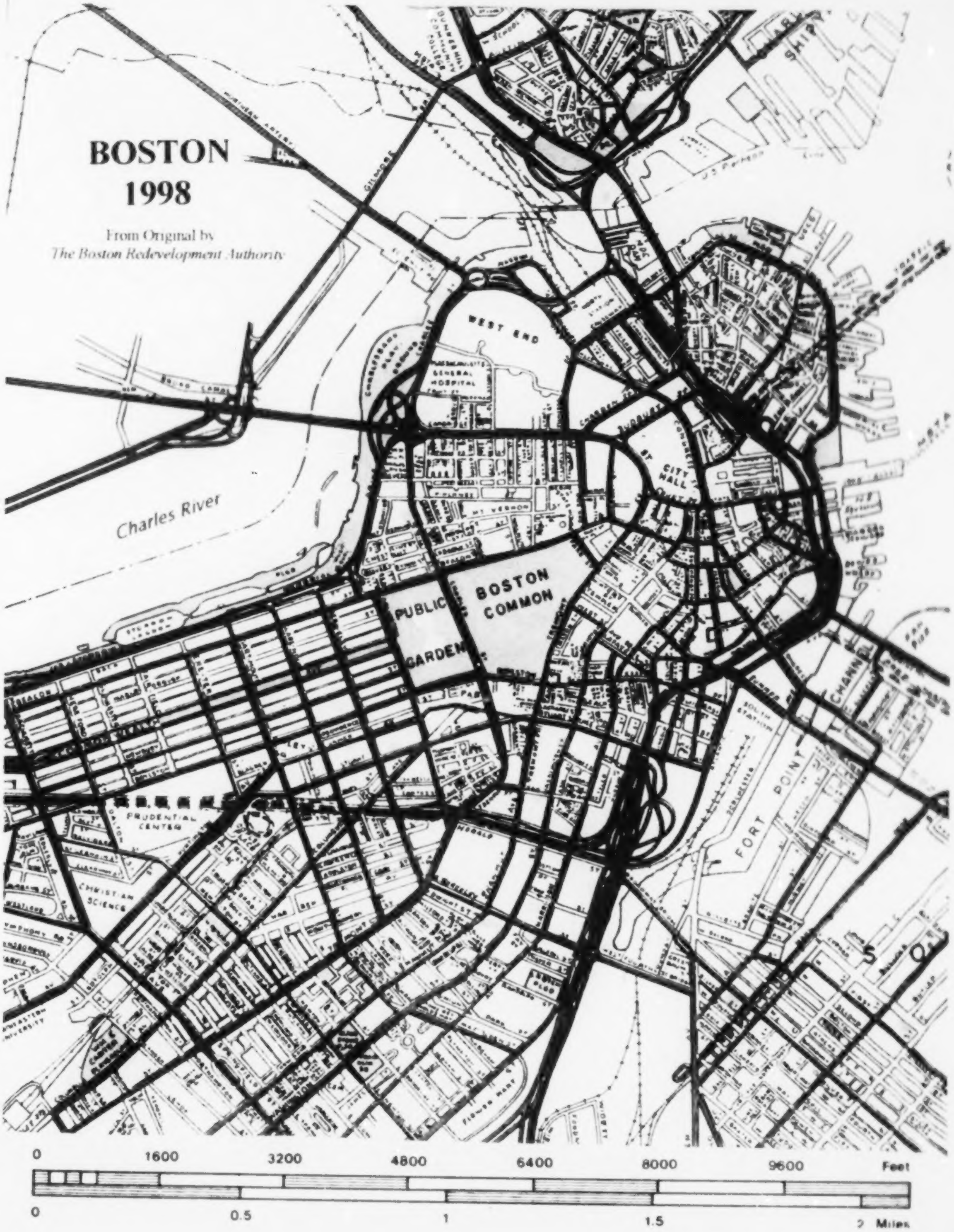
BOSTON
1998
From Original by
The Boston Redevelopment Authority
Charles River
WEST END
GENERAL HOSPITAL
CITY HALL
MT VERNON
PUBLIC
GARDEN
BOSTON
COMMON
PRUDENTIAL CENTER
CHRISTIAN SCIENCE
SOUTH STATION
FORT POINT
CHANNEL
0
1600
3200
4800
6400
8000
9600
Feet
0
0.5
1
1.5
2 Miles

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13

GEOGRAPHY AND THE PAST IN THE NEIGHBORHOODS OF SALEM, MASSACHUSETTS (ACTIVITY)

Theodore S. Pikora

Introduction:

This lesson focuses on a comparative neighborhood analysis of the McIntire and Derby Street Historic Districts in Salem (*see* Salem, Massachusetts: Neighborhood Study Areas map attached to this activity). The Derby Street area is one of the oldest neighborhoods and it has been influenced by all of the city's historical changes including the arrival of immigrants and the more recent efforts at historic rehabilitation and gentrification. The McIntire neighborhood evolved primarily from the wealth generated by the era of maritime trade, and it features classical architecture including the Georgian and Federal styles. Many of the Federal structures are attributed to the work of Samuel McIntire, Salem's most notable architect. Comparisons of contrasting geographic patterns between the neighborhoods are based on an analysis of related building construction data and maps. In the interests of time and data management, only selected streets in the neighborhoods are used as examples for analysis. Turner Street and part of Derby Street are used in the Derby Street neighborhood and Cambridge and most of Chestnut Streets are the case studies in the McIntire District.

Grade Level: 7-12 (Depending on Options)

Time Required: 3-5 days

Themes and Key Ideas:

relative location, neighborhoods as regions, interaction between regions, sense of place, organization of space, economic value of land and its use, land use density

National Geography Skills and Standards*:

- Sets of geographic skills, see pp. 46-48, *Geography for Life.**
- National Geography Standards:
  - **3.** How to analyze the spatial organization of people, places, and environments on the Earth's surface, pp. 66-68;
  - **4.** The physical and human characteristics of place, pp. 69-70;
  - **5.** That people create regions to interpret Earth's complexity, pp. 70-72;
  - **12.** The processes, patterns, and functions of human settlement, pp. 87-88;
  - **17.** How to apply geography to interpret the past, pp. 101-102.

**Geography for Life: National Geography Standards* 1994. Washington, D. C.: National Geographic Research and Exploration for the American Geographical Society, Association of American Geographers, National Council for Geographic Education, and the National Geographic Society.

Vocabulary:

relative location, First Period, Georgian, Federal, triple decker, streetscapes, neighborhood, pedestrian neighborhood, land value, maritime era, immigrants, housing and street density

Objectives: As a result of this lesson, students should understand:

- how to use a case study street to develop a concept of neighborhood organization;

- approaches used in the identifying spatial patterns;
- influences on the value of land and its use for housing;
- conditions that can influence neighborhood change;
- the role of historic influences in the character of neighborhoods in the present;
- the nature of architectural style and its significance in housing construction and neighborhood formation; and
- the relationship between geography, social class, and neighborhood character.

Skills: As a result of this lesson, students should develop skills in:

- classifying and developing map symbols for data;
- plotting data on maps using estimated locations;
- analyzing and interpreting patterns of data;
- collecting information that can identify patterns on maps;
- preparing outlines and narrative essays that relate the nature of findings from map analyses; and
- working cooperatively in groups.

Materials:

- pencils, colored pencils, rulers, and paper;
- three project maps included in this lesson;
- descriptive photographs of Cambridge, Chestnut, Turner, and Derby Streets (attached to this activity);
- building construction data tables for selected study street addresses (Courtesy of the Massachusetts Historic Commission. Boston, Massachusetts and Edward Carberg, Salem historian);
- Chapter 6 by Theodore S. Pikora titled "Salem, Massachusetts: The Changing Geography of a Coastal Community in New England," included in this book; and
- resource literature on architectural styles.

The Learning Activity:

Background:

In this lesson, ask students to construct, compare, and understand the origins and significance of the McIntire and Derby Street neighborhoods in Salem, a city that has traced much of its development through its relationship with the sea. The activity uses several sets of data related to building construction for the case studies of Turner, part of Derby, Cambridge and most of Chestnut Streets. Specific information in the data set includes the date of construction, street and street number, architectural style, owner name, and in some cases, the occupation of the residents.

Introduction:

The cityscape of Salem is made up of many distinct neighborhoods that directly reflect the historical evolution of the city. During the first century of development beginning in 1626, the center of the settlement on the Naumkeag Peninsula contained the houses of people of all social classes and occupations, and the *First Period* architectural style was dominant. Except for commercial activities along the shorelines, land uses were mixed and typical of the *pedestrian city*, especially in the area around Derby and Turner Streets. In the next century between approximately 1720 and 1830, new neighborhoods grew on the western part of the peninsula, away from commercial and shipping activities and from lower social classes in the older pedestrian parts of town. They represented the spatial separation of housing types based on land with variations in value. Before the Revolution, skilled artisans and those who made their money from seafaring built new homes mostly in the Georgian style in both the older and new residential sections of town. After the

Revolution, the new wealth from trade with the Far East and other distant ports permitted these traders to construct elegant homes in the Federal style, mostly in the new neighborhoods. Many had brick facades during the later part of the period, especially around Chestnut Street. Carriages often carried people from the upper class neighborhoods to their places of business and to social gatherings. By the middle of the nineteenth century, immigrants began to arrive in the city to work in the textile mills. Many found housing in the oldest sections of the pedestrian neighborhoods near to the waterfront and the mills. Over time, multi-family or *three-decker housing* was constructed for many of these newcomers, often replacing the First Period or other early architectural styles. In addition, the wealth of the mill era and the fortunes generated from the earlier period of seafaring permitted these people to construct newer Revival, Italianate, and Victorian architectural designs. An analysis of construction data can provide an understanding of the evolution and character of current neighborhoods. Teachers and students can review additional information and a series of relevant maps related to the setting of the developmental dynamics in Salem in Chapter 6 by Theodore S. Pikora of this book. Note that *triple houses* on Chestnut are adjoining homes, not the *three-decker* apartment buildings in the Derby Street area (*see* end note in Chapter 6). Also note that the streets included on the lesson maps represent only a portion of the actual historic districts.

Executing the Activity:

Ask students to map architectural styles on Cambridge and Chestnut Streets, part of Derby and Turner Street in the McIntire and Derby Street neighborhoods, respectively. They can use additional building, ownership, and occupation information as clues to examine geographic patterns. The teacher may wish to divide the class into several or more groups that can compare the results of the data and map analysis. The data table contains information for the street address, construction date, architectural style, owner, building name and, in some cases, the occupation of people who lived in the buildings on the streets in the neighborhood study areas. The first task is to develop map symbols for the First Period, Georgian, Federal, and triple decker architectural styles; each representing important eras in Salem's history. Teachers might familiarize students with the general design of each style to develop a sense of character for the related streetscapes. Symbols of colored circles can work well. Buildings along the study streets not included in these style categories can be marked with an "X" symbol. Each student group should plot the categories of structures with an estimated street address using the available maps. Available street numbers on the map are labeled facing the street. Teachers may wish to enlarge the map included in this lesson for ease in placing the addresses on the streets. In some instances, the same address may have two architectural types listed because of additions or revisions to a structure. Students can use either the first (a more simple approach) or both architectural types, but they should be consistent in their option. They can also use construction dates, ownership, names, and occupations available in the data set and descriptive photographs as supportive information to draw conclusions.

Analysis:

The teacher should give the class the following statements about the two neighborhood subjects for discussion. "The Derby Street Neighborhood was first built during the earliest days of the city; it has always been part of the walking or *pedestrian* character of the downtown; and it has been influenced by many economic and social changes through time." "The McIntire District was constructed mostly because of the culture and prosperity of the maritime era; it is made up of larger homes, sometimes with carriage houses; and it has changed little in its appearance since that time." The basis of the analysis is focused on a search for evidence in each neighborhood that supports these descriptions. The student groups should compare the maps and information for the neighborhoods, then identify and discuss the significance of the following geographic patterns:

a. The location, situation, and variety of architectural styles; and the types of people who might have built or lived in the housing. (Homes from the *First Period* to triple deckers are found on Turner and Derby Streets where social transitions and housing changes are more evident…a higher concentration of professional occupations can be found in the McIntire District…a higher percentage of historical data is available for the McIntire District reflecting its perceived higher value vs. the working-class Derby Street District.)

b. The most vs. the least density of housing and streets. (The highest densities are found in the older Derby Street neighborhood).

c. Nearness to mills and places of work. (The Derby Street neighborhood is closer indicating its pedestrian character and the *working class* of its inhabitants.) Review additional information from Table 1 including:
   1. The range of dates of construction from the most recent to the oldest.
   2. Occupations, building names, and clues about types of people who have lived in the neighborhoods. Note the many ethnic references (Polish) and "working class" occupations and establishments in the Derby Street area.

Groups can read "Salem, Massachusetts; The Changing Geography of a Coastal Community in New England," Chapter 6 in this book, for more clues that can support the unique character of the Derby Street and McIntire neighborhoods.

Concluding the Activity:

Groups should itemize and present their information in support of the character of the two streets. Each student should then write a narrative essay describing how the streets might reflect the surrounding neighborhoods based on the evidence. Students should reference the sources of information for their conclusions.

Options:

Several options are available to expand the lesson:

a. The project can be expanded to include more streets in each of the neighborhoods. In this case, teachers might wish to have students explain the case study streets as regional cores. Additional neighborhoods also may be added. Data for more than 3,000 address listings are available from the Massachusetts Historic Commission in Boston, Mass. (Tel. 617-727-8470). The Commission can send the data via e-mail using several file options.

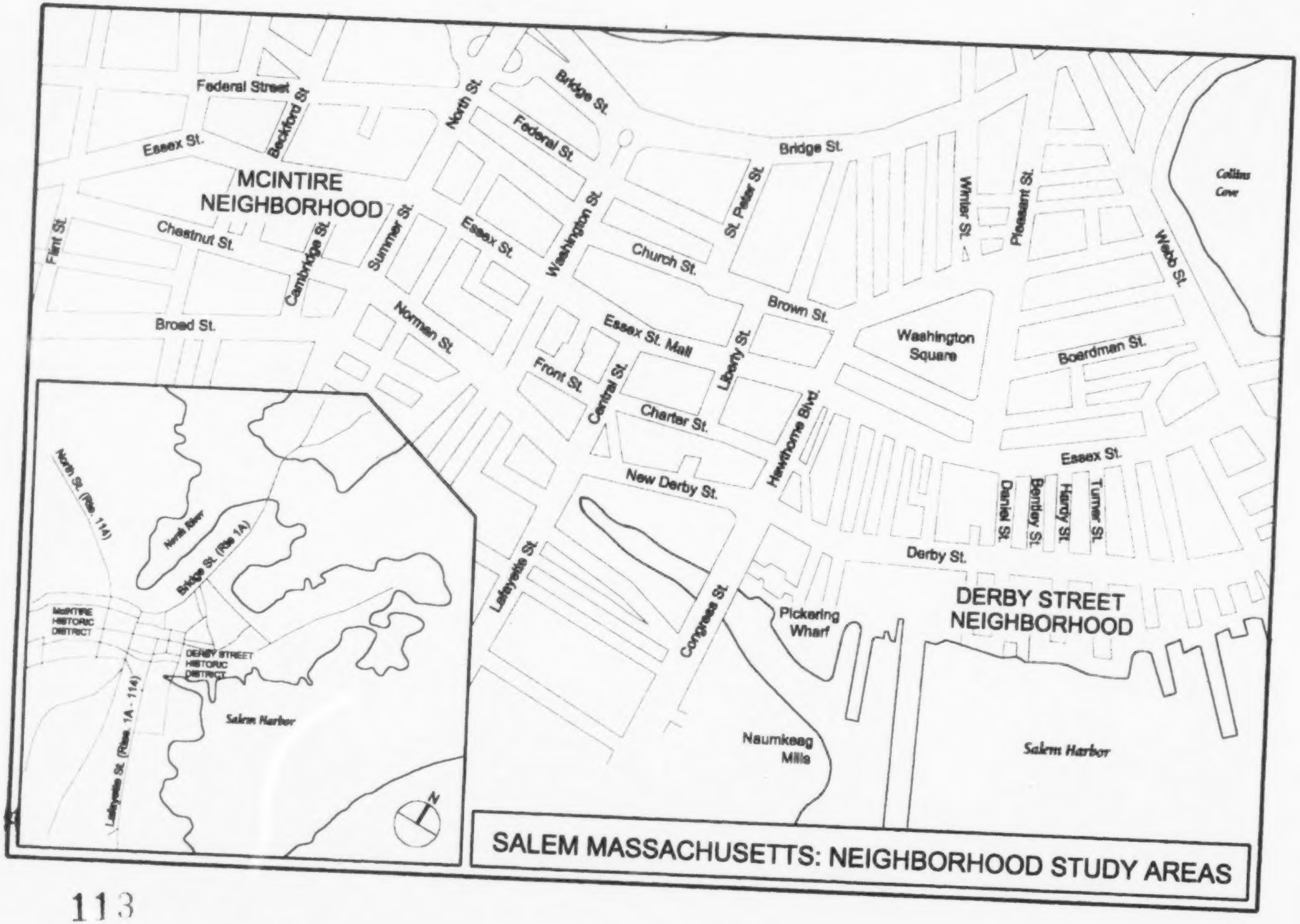
b. Teachers may wish to use the era of construction based on dates instead of architectural styles for mapping the data. Convenient classifications for historical eras are: First Period 1620-1720, Georgian 1721-1780, Federal 1781-1830, and triple decker 1860-1930. Note that although architectural styles are not the focus in this option, it still uses only four periods of styles to keep the lesson less complex and it suggests that architecture can be used as supporting evidence.

c. Teachers can make the analysis more detailed with the use of symbol shapes for the construction date categories and color for architectural style.

d. Teachers might use a cross-curriculum approach with literature, art and history. Topics include the setting and significance of selected addresses such as the House of the Seven Gables and the Judge Jonathan Corwin House of the Salem Witch Trials (moved from its original location), among other structures. Artistic renderings of selected streetscapes using appropriate architectural styles and density can add to an appreciation of the character of the neighborhoods.

Evaluating the Activity:

Teachers can evaluate the creativity used in selecting and presenting information and its effectiveness in supporting conclusions in the group presentations and in individual student essays. Students can evaluate learnings by comparing outcomes common to all reports and the unique contributions as well.


Federal Street
Beckford St
North St.
Bridge St.
Federal St.
Essex St.
MCINTIRE NEIGHBORHOOD
Bridge St.
St. Peter St.
Winter St.
Pleasant St.
Collins Cove
Flint St.
Chestnut St.
Cambridge St.
Summer St.
Essex St.
Washington St.
Church St.
Webb St.
Broad St.
Norman St.
Essex St. Mall
Liberty St.
Brown St.
Washington Square
Boardman St.
Front St.
Central St.
Charter St.
Hawthorne Blvd.
Essex St.
New Derby St.
Daniel St.
Bentley St.
Hardy St.
Turner St.
Lafayette St.
Derby St.
Congress St.
Pickering Wharf
DERBY STREET NEIGHBORHOOD
Naumkeag Mills
Salem Harbor
North St. (Rte. 114)
North River
Bridge St. (Rte 1A)
McINTIRE HISTORIC DISTRICT
DERBY STREET HISTORIC DISTRICT
Lafayette St. (Rtes. 1A - 114)
Salem Harbor
N

SALEM MASSACHUSETTS: NEIGHBORHOOD STUDY AREAS

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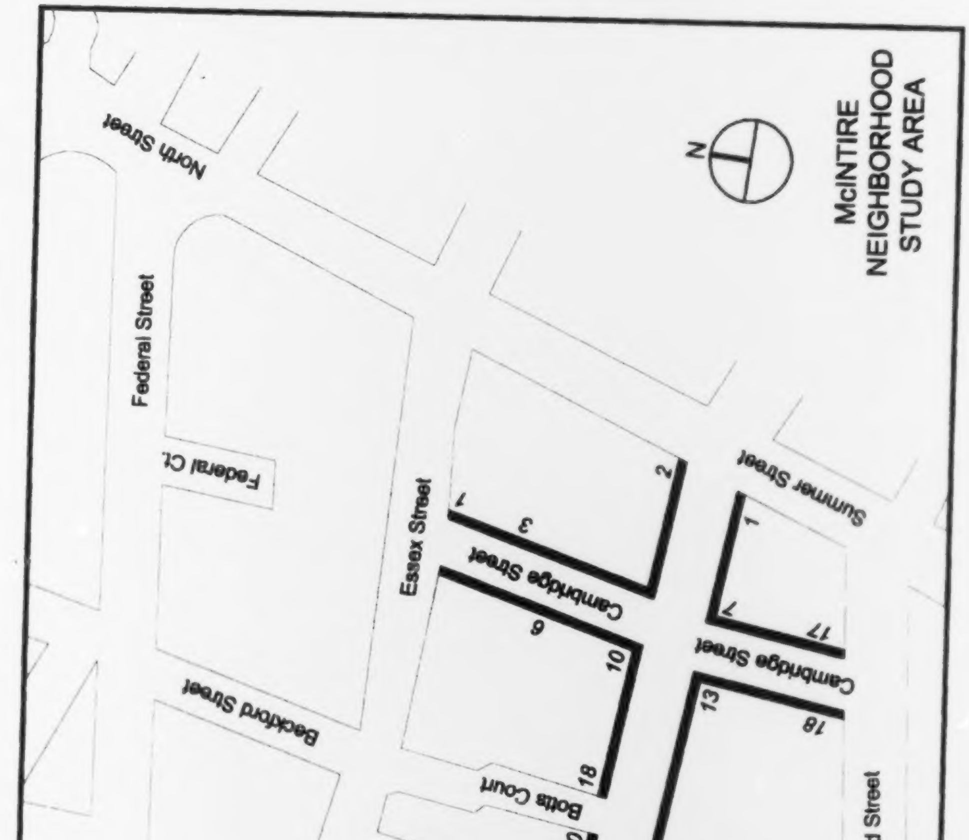
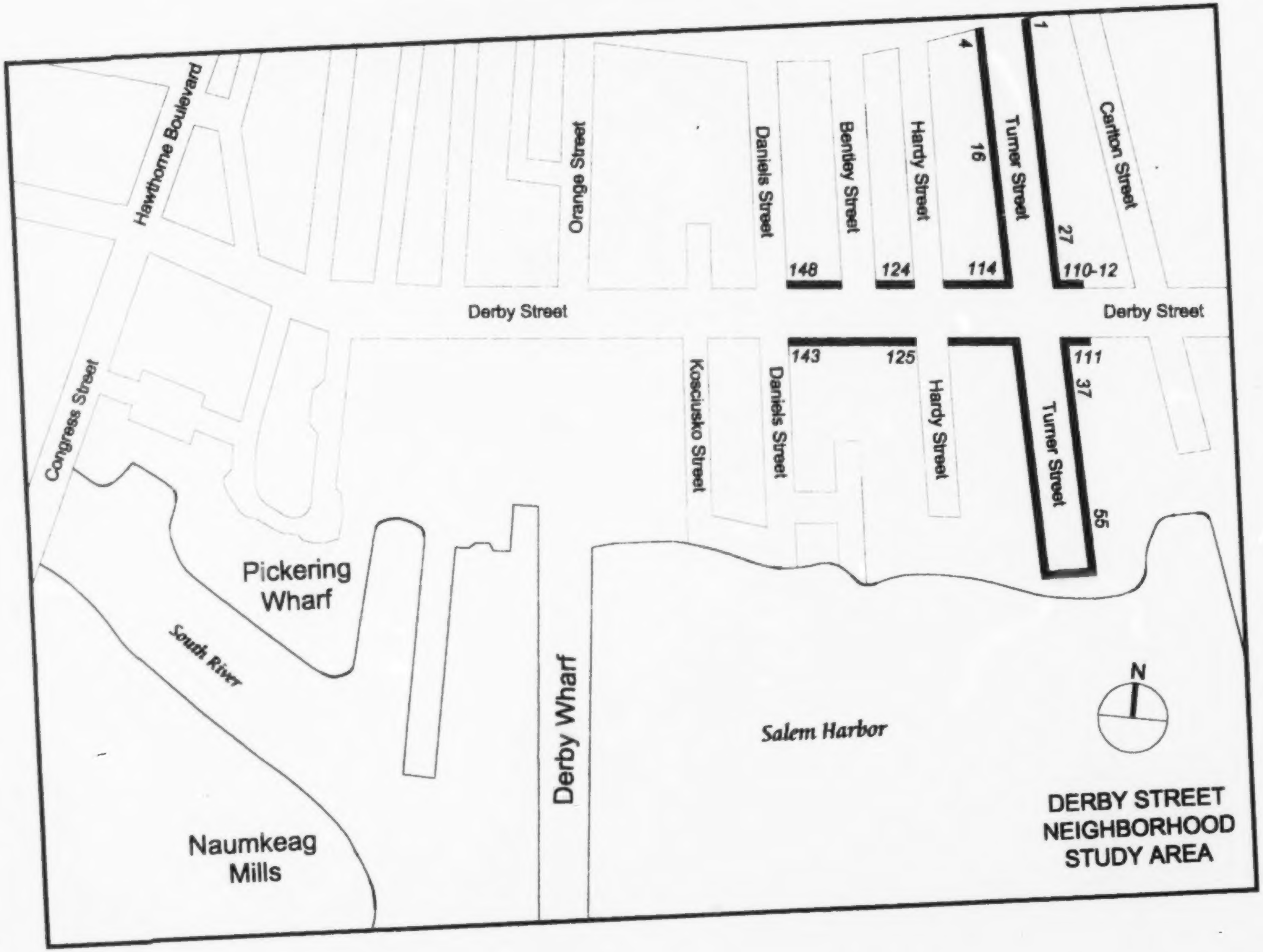

McINTIRE
NEIGHBORHOOD
STUDY AREA
N
North Street
Federal Street
Federal Ct.
Essex Street
Cambridge Street
Summer Street
Cambridge Street
Beckford Street
Botts Court
Hamilton Street
Broad Street
Monroe St.
Pickering Street
Federal Street
Essex Street
Chestnut Street
Warren Street
Flint Street
1
3
2
6
10
1
7
17
13
18
18
20
22
24
25
27
42
41


Hawthorne Boulevard
Orange Street
Daniels Street
Bentley Street
Hardy Street
Turner Street
Carlton Street
4
1
16
27
148
124
114
110-12
Derby Street
Derby Street
143
125
111
37
55
Congress Street
Kosciusko Street
Daniels Street
Hardy Street
Turner Street
Pickering Wharf
South River
Derby Wharf
Salem Harbor
N
Naumkeag Mills
DERBY STREET NEIGHBORHOOD STUDY AREA

ADDRESS INFORMATION FOR SELECTED STREETS:
SALEM, MASSACHUSETTS

DATE	STR NO.	STR NAME	ORIGINAL OWNER/OCCUPANT	LATER OWNER/OCCUPANT	ARCHITECTURE
1750	1	Cambridge St	Mason, Capt. Thomas (Sea Captain) House	Peirce, Capt. Daniel House	Georgian
1780	3	Cambridge St	Stone, Eliza (Widow) - Osgood, J. B. F. House	Johnson, Lucy P. - Ropes, John B. House	Federal
1775	6	Cambridge St	Daniel Story * (Cooper)	Seaman's Orphans and Children's Friends Society	Federal
1806	7	Cambridge St	Hamilton Hall		Federal
1890	9	Cambridge St	Coggin, Dr. David (Physician) House	Osgood, Nathan Cook House	Colonial Revival
1833	11	Cambridge St	Littlefield, Theodore (Mason) House	Hale, Pemberton - Hayford, Amos House	Greek Revival
1839	13	Cambridge St	Hale, Pemberton (Housewright) House	Woodbury, Lydia Hale - Hayford, Amos House	Greek Revival
1806	14	Cambridge St	Butman, Thomas - Waters, John G. (Sea Captain) House		Federal
1850	14	Cambridge St	Butman, Thomas - Waters, John G. Carriage House		Victorian Eclectic
1840	15	Cambridge St		Patterson, Nancy - Bennett, Frederick A. House	Greek Revival
1820	16	Cambridge St	John M. Nichols* (Painter)	Nichols, James House	Federal
1800	17	Cambridge St	Ireland, William (Tobacconist) House	Hammond, John - Sluman, Benjamin House	Federal
1865	18	Cambridge St	Buckley, James J. (Liquor Dealer) House	Murphy, Isabella House	Second Empire
1720	1A	Cambridge St	Bowditch House Ell	Hullett - Perkins, John House	Federal
1850	1	Chestnut St	Cox, Francis (Carriage Maker) House		Italianate
1853	6	Chestnut St	Nichols, Charles S. (Secretary of Company) House	Neal, Theodore - Harrington, Mary House	Italianate
1805	8	Chestnut St	Gregg, Daniel - Stone, Dea. John (Distiller) House	Rantoul, William G. House	Federal
1808	10	Chestnut St	Robinson, Nathan (Merchant)- Little, Phillip House		Colonial Revival
1808	10	Chestnut St	Robinson, Nathan - Little, Phillip (Artist) House		Federal
1804	12	Chestnut St	Hodges, Capt. Jonathan Carriage House		Federal
1804	12	Chestnut St	Hodges, Capt. Jonathan (Sea Captain) House	Peele, Jonathan Willard - West, Emily C. F. House	Federal
1832	13	Chestnut St	King, Elizabeth (Widow) House	Neal, Sarah - Kittredge, Dr. Thomas House	Greek Revival
1835	14	Chestnut St	Lee, John Clarke (Banker) House	Benson, Frank W. House	Greek Revival
1804	15	Chestnut St	Towne, Amos (Schoolmaster) and Capt. Solomon House	Osgood, Nathaniel C. - King, James House	Federal
1800	18	Chestnut St	Bott, James B. House	Fabens, Augustus (Bank Clerk) and Benjamin House	Federal
1805	19	Chestnut St	Cleveland, Rev. Charles - Williams, Israel House	Peabody, Henry W. (Merchant) - Rantoul, William G.	Federal
1805	19	Chestnut St	Cleveland, Rev. Charles Carriage House		Federal
1835	24	Chestnut St	Phillips, Stephen Clarendon (Merchant)- Peele House	Grace Church Rectory - Safford, Samuel A. House	Greek Revival
1802	25	Chestnut St	Dodge, Pickering (Merchant) - Barstow House	West, George S. - Nichols, Sophia House	Federal
1826	26	Chestnut St	Devereux, Humphrey (Merchant) - Hoffman, Charles Carriage Hse		Federal
1826	26	Chestnut St	Devereux, Humphrey - Hoffman, Charles House	Simpson, Dr. James E. House	Federal
1911	27	Chestnut St	Pickman, Capt. Dudley Leavitt - Shreve Garage		Colonial Revival
1911	27	Chestnut St	Pickman, Capt. Dudley Leavitt (Merchant)- Shreve Garage		Colonial Revival
1819	27	Chestnut St	Pickman, Capt. Dudley Leavitt - Shreve House	Silsbee, John - Little, David Mason House	Federal
1800	28	Chestnut St	Tucker, Ichabod (Clerk of Salem Court) House	Cole, Thomas House - First Church Parsonage	Federal
1800	28	Chestnut St	Tucker, Ichabod House	Cole, Thomas House - First Church Parsonage	Greek Revival
1822	29	Chestnut St	Dodge, Pickering (Merchant)- Shreve, Benjamin D. House	Cabot, Joseph S. House	Federal
1822	29	Chestnut St	Dodge, Pickering - Shreve, Benjamin D. Stable		No style
1896	30	Chestnut St	Wheatland, Ann M. (Widow) House	Pickering, John House	Colonial Revival

Occupation and selected * owner/occupant information courtesy of Edward W. Carberg, Salem Historian. All other data from the Massachusetts Historical Commission.

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ADDRESS INFORMATION FOR SELECTED STREETS: SALEM, MASSACHUSETTS

DATE	STR NO.	STR NAME	ORIGINAL OWNER/OCCUPANT	LATER OWNER/OCCUPANT	ARCHITECTURE
1830	31	Chestnut St	Dodge, Pickering (Merchant) Triple House	Silsbee, Nathaniel (US Senator) - Allen, John F. House	Federal
1830	31	Chestnut St	Dodge, Pickering Triple House	Silsbee, N. - Allen, John Fistke (Gentleman) House	Row House
1830	33	Chestnut St	Dodge, Pickering Triple House	Dodge, Pickering Jr. - Sanders, Charles House	Federal
1830	33	Chestnut St	Dodge, Pickering Triple House	Dodge, Pickering Jr. - Sanders, Charles House	Row House
1820	34	Chestnut St	West, Nathaniel (Merchant) House	Phillips, Stephen Willard Memorial Trust House	Colonial Revival
1820	34	Chestnut St	West, Nathaniel House	Phillips, Stephen Willard Memorial Trust House	Federal
1824	34	Chestnut St	West, Nathaniel Carriage House		Federal
	35	Chestnut St	Dodge, Pickering Triple House Carriage House		Colonial Revival
1830	35	Chestnut St	Dodge, Pickering (Merchant) Triple House	Upham, Charles W. (Clergy)- Huntington, Asahel House	Federal
	35	Chestnut St	Dodge, Pickering Triple House Carriage House		Federal
1830	35	Chestnut St	Dodge, Pickering Triple House	Upham, Charles W. - Huntington, Asahel House	Row House
1900	37	Chestnut St	Nichols, Capt. George (Merchant)- Shattuck Carriage House		Colonial Revival
1816	37	Chestnut St	Nichols, Capt. George - Shattuck, Ann B. House	Pingree, David - Lander, William A. House	Federal
1805	39	Chestnut St	Saunders, Capt. Thomas (Merchant) House	Saltonstall, Mary B. - Ives, George B. House	Federal
1810	41	Chestnut St	Saltonstall, Leverett (Mayor, US Representative) - Tuckerman (Merchant) Double House		Federal
1858	42	Chestnut St	Ropes, Maria House	Henson, Tobias A (Butcher) House	Italianate
1804	17-17 1/2	Chestnut St	Phillips, Capt. Stephen Clarendon (Sea Captain) House	Shreve, Benjamin D. House	Federal
1804	17-17 1/2	Chestnut St	Phillips, Capt. Stephen Clarendon Barn		No style
1835	20-22	Chestnut St	Thompson, James W. - Ree, William A. (Merchant)	Thompson, Rev. James W. (Minister) Double House	Federal
1835	20-22	Chestnut St	Thompson, James W. - Ree, William A. Double House	Thompson, Rev. James Westfall Double House	Greek Revival
1814	21-23	Chestnut St	Pickering, Henry and John Double House	Mack, Elisha J.(Judge) - Stone, Benjamin W. House	Federal
1814	21-23	Chestnut St	Pickering, Henry and John Carriage House		Not researched
1920	31R	Chestnut St		Dodge, Pickering (Merchant) Triple House	No style
1910	37R	Chestnut St			Colonial Revival
1845	38-40	Chestnut St	West, Nathaniel - Thompson, James W. Double House	Andrews, Col. Joseph S. - Silsbee Double House	Colonial Revival
1845	38-40	Chestnut St	West, Nathaniel (Merchant)- Thompson, J. W. House	Andrews, Col. Joseph S. - Silsbee Double House	Federal
1845	38-40	Chestnut St	West, N. - Thompson, J. W. (Minister) Double House	Andrews, Col. Joseph S. - Silsbee Double House	Greek Revival
1828	5-7 1/2	Chestnut St	Stone, Dea. John Double House	Upton, Luther (Merchant) - Fenollosa, Ernest House	Greek Revival
1769	111	Derby St	Ropes, David House	Elkins, John (Sea Captain) - McMillan, Capt. John House	Georgian
1806	114	Derby St	Waters, Capt. Joseph (Sea Captain) House	Bertram Home for Aged Men - Sons of Poland Hall	Federal
1900	117	Derby St			Colonial Revival
1900	117	Derby St			Triple-decker
1820	118	Derby St		Norfolk, Joseph House - Bertram Home for Aged Men	Federal
1864	122	Derby St	Nichols, David Augustus (Grocer) Grocery Store	Ye Olde Pepper Company Ice Cream and Candy Store	Colonial Revival
1910	124	Derby St		Potorski, Tony (Owner) Pool Hall - Grabas Catering	No style
1768	125	Derby St	Allen, Capt. Edward (Sea Captain) House	Waters, Capt. Joseph House	Georgian
1870	126	Derby St	Donahue, Michael (Laborer) House		Colonial Revival
1870	126	Derby St	Donahue, Michael House		Triple-decker
1810	127	Derby St	Allen, Capt. Edward Store		No style
1880	131	Derby St		Christian Army Home - Hedstrom Furniture Factory	Colonial Revival

Occupation and selected * owner/occupant information courtesy of Edward W. Carberg, Salem Historian. All other data from the Massachusetts Historical Commission

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ADDRESS INFORMATION FOR SELECTED STREETS:
SALEM, MASSACHUSETTS

DATE	STR.NO.	STR NAME	ORIGINAL OWNER/OCCUPANT	LATER OWNER/OCCUPANT	ARCHITECTURE
1880	131	Derby St		Christian Army Home - Hedstrom Furniture Factory	Triple-decker
1910	135	Derby St			Colonial Revival
1910	135	Derby St		Goldstein, Louis* (Shoe Repairer)	Triple-decker
1850	136	Derby St		Doherty, Charles* (Saloon Keeper)	Federal
1922	136 1/2	Derby St	Kohn, Alexander (Grocer) Variety Store	Polish American Veteran's Society Hall	No style
1900	137	Derby St		Alpers, Samuel* (Merchant)	Colonial Revival
1900	137	Derby St		Silverman, Morris* (Rabbi), Kaplan Sam* (Junk Dealer)	Triple-decker
1820	138	Derby St		Brickley, Patrick* (Saloon Keeper)	Federal
1820	140	Derby St			No style
1836	143	Derby St		Moynihan, Daniel* (Grocer)	No style
1916	148	Derby St	Dubetsky, Morris (Grocer) Groc. and Provision Store	In A Pig's Eye Cafe	No style
1820	110-112	Derby St	Lane, Capt. William (Sea Captain) House	Cremo Cafe - No Name Pub - Grand Turk Tavern	Federal
1780	132-134	Derby St			No style
1840	142-144	Derby St		Ames, Caleb* (Stabler)	Greek Revival
1870	1	Turner St		Anthony, Francis* (Mariner)	Victorian Eclectic
1815	4	Turner St		Smith, Henry F.* (Upholsterer)	Federal
1810	5	Turner St		Hogan, Charles* (Cook)	Federal
1913	7	Turner St		Buckley, Michael* (Janitor)	Colonial Revival
1913	7	Turner St			Triple-decker
1841	15	Turner St	Very, Nathaniel (Blacksmith) House		Greek Revival
1739	20	Turner St		Nason, David* (Conductor)	No style
1779	21	Turner St	Ellison, John (Watchman) House		Colonial
1793	37	Turner St	Kenney, Jesse (Cooper) House	Batchelder, Henry* (Bank Teller)	Federal
	39	Turner St		Osborne, Jonathan* (Grocer)	
	41	Turner St			
1814	42	Turner St	Bowditch, Ebenezer (Goldsmith) House		Federal
1814	42	Turner St	Bowditch, Ebenezer House		Georgian
1771	43	Turner St	Townsend, Penn (Cooper) House		Colonial
1843	49	Turner St	Whipple, Jonathan (Factory Owner) House		Greek Revival
1655	54	Turner St	Beckett, Retire (Ship Builder) House		First Period
1668	54	Turner St	Turner, Capt. John (Merchant) "House of Seven Gables"		First Period
1682	54	Turner St	Hathaway House - Old Bakery	Hooper (Shoemaker) House	First Period
	57	Turner St		Remon, Will* (Boat Builder)	Romanesque Revival
1800	12-Oct	Turner St			Colonial
1785	45-47	Turner St	Collins, Captain (Sea Captain) John House		Georgian
1855	53-55	Turner St	Whipple, Stephen (Mill Owner) and Sons, Housing for Workers		Victorian Eclectic
	57R	Turner St		Remon Brothers* (Boat Builders)	

Occupation and selected * owner/occupant information courtesy of Edward W. Carberg, Salem Historian. All other data from the Massachusetts Historical Commission

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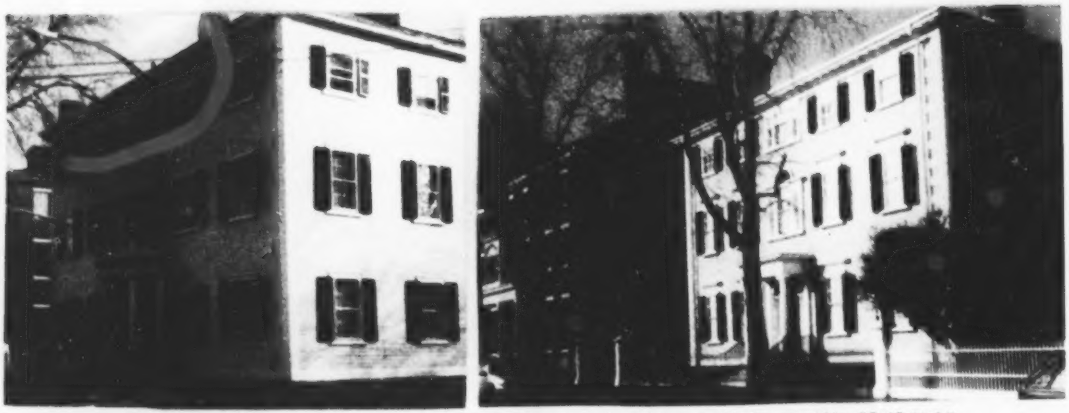
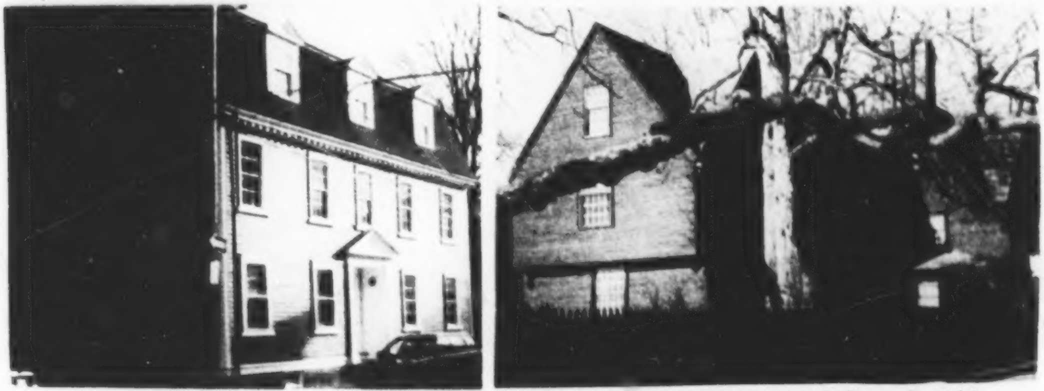
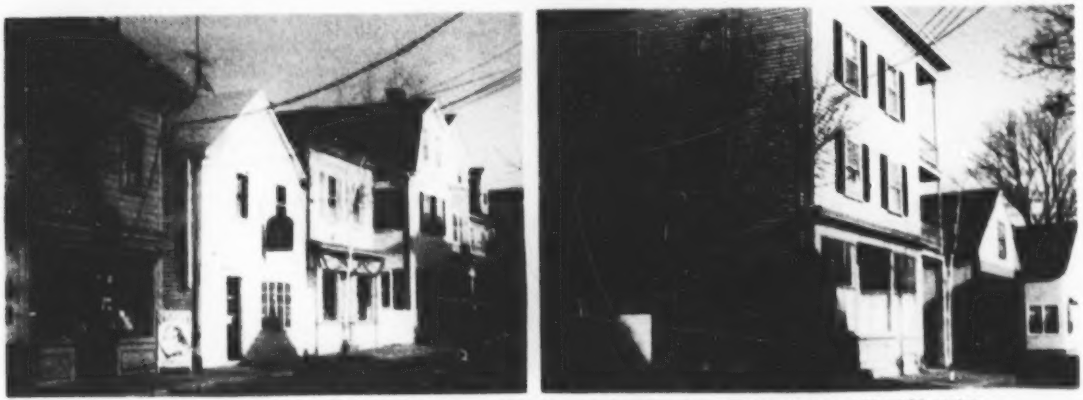


Federal architecture at No. 25 Chestnut Street (left). No. 34, and the double house at No. 38-40 (right)



Georgian style of No. 1 Cambridge St. (left). First Period House of Seven Gables at No. 54 Turner St. (right)



Scene from No. 148 Derby Street (extreme left) with mix of architecture. Three decker at No. 126 (right)